MAY 24 1933

HYGEIA

The HEALTH MAGAZINE

PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION

June, 1933 25 Cents

H. Latané Lewis II: Wings of Mercy

J. H. J. Upham: The Modern Hospital

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HYGEIA

THE HEALTH MAGAZINE

Published by the American Medical Association • • • Edited by Morris Fishbein, M.D.

Volume 11 JUNE, 1933 Number 6

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● Dr. W. McKim Marriott, St. Louis, is dean and professor of pediatrics, Washington University School of Medicine. . . . In "Open Wider, Please," Francis F. Smith, D.D.S., Seattle, gives some interesting and some amusing sidelights on the dentist's office. . . . H. Latané Lewis II, Washington, D. C., draws a vivid picture of the humanitarian work carried on by the "Wings of Mercy" of the U. S. Army Air Corps.

● Dr. Gaylord W. Graves, clinical professor of pediatrics, New York University and Bellevue Hospital Medical College, contributes another of the radio talks which he delivered for the New York Society for Instruction in First Aid. . . . R. H. Beaumont, Jr., Philadelphia, discusses the necessity and the means of maintaining sanitation in the private swimming pool. . . . Alfred C. Boand, who has for some years been an instructor of radio gymnasium classes, analyzes the practical value of such classes and describes the constructive lines along which they may develop in the future.

● James A. Tobey, Dr.P.H., New York City, is a frequent contributor to Hygeia and has recently published the book "Cancer: What Everyone Should Know About It." . . . Edith Boden, St. Louis, relates one of her experiences in Labrador as a member of the staff of Sir Wilfred Grenfell. . . . Florence C. Johnston, Portland, Ore., is well qualified, as the wife of a physician, to report what happens "All in a Day."

● Dr. A. Brockway is chief resident surgeon, Orthopaedic Hospital-School, Los Angeles. . . . Dr. P. M. Ashburn, Colonel, U. S. Army, retired, tells how typhoid was conquered by the army. . . . Alfred E. Parker, director of physical education, Berkeley (Calif.) High School, warns against the bypaths that may lure the traveler from the road to health.

● Dr. Solon R. Barber, who is in charge of the information service, Federal Food and Drug Administration, outlines the limitations in power of that body. . . . Doris W. McCray, food consultant, tells how the modern refrigerator guards the family health and wealth.

● For the youngest readers, Sara Fay Wait, Washington, D. C., writes the fascinating story of "Dr. Brown, Doctor of Magic."

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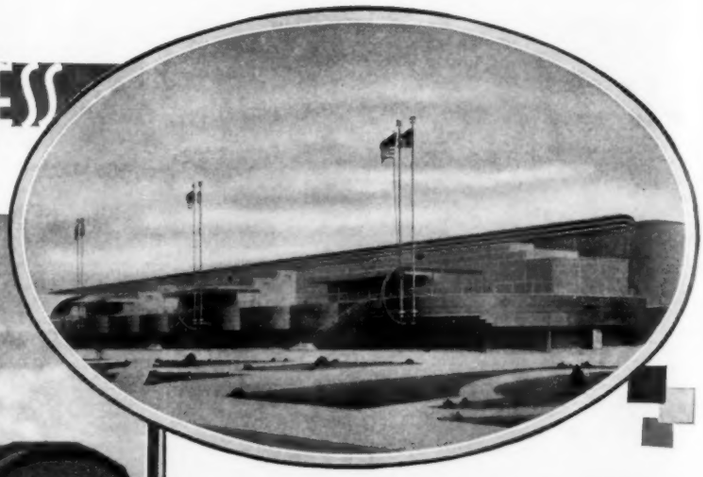
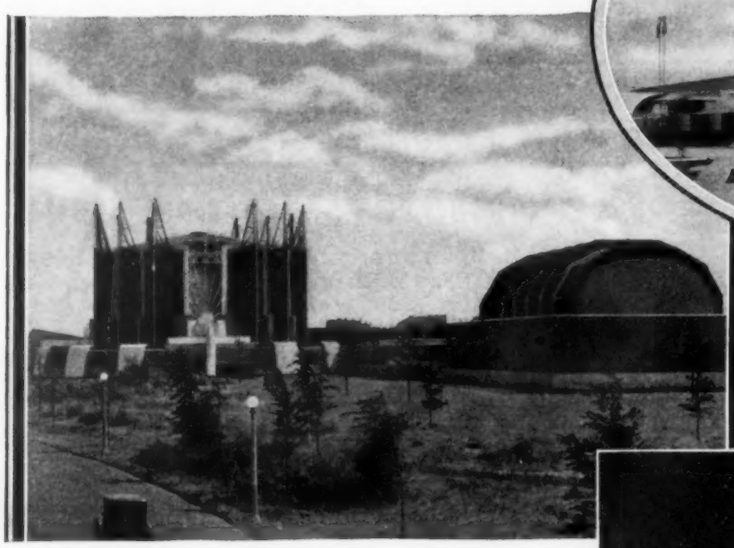
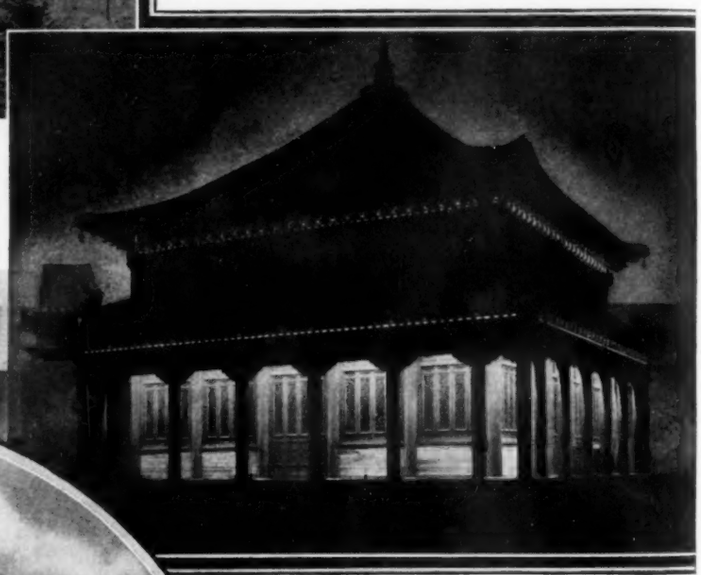
A CENTURY OF PROGRESS



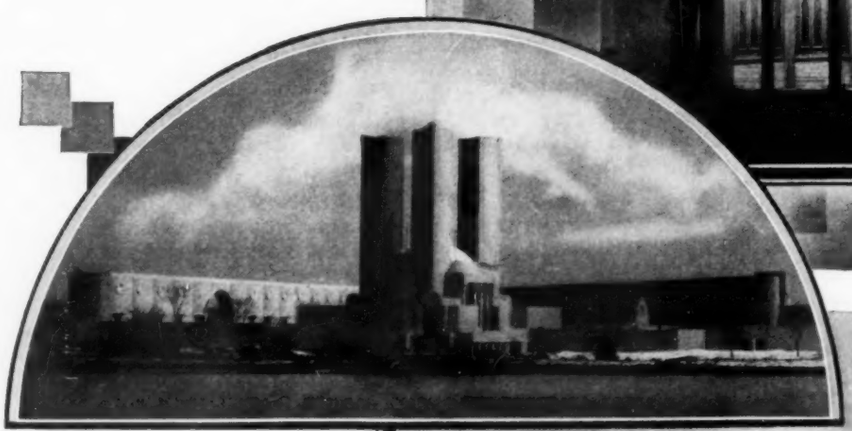
THE AGRICULTURAL BUILDING FOR EXHIBITS OF FOOD PRODUCTION AND MERCHANDISING



TRAVEL AND TRANSPORT BUILDING WITH "SKY HUNG" DOME



THE GOLDEN ROOFED CHINESE TEMPLE OF JEHOL



THE FEDERAL BUILDING WITH THREE TOWERS, REPRESENTING ADMINISTRATIVE, LEGISLATIVE AND JUDICIAL BRANCHES OF DEMOCRACY

1933

RECONSTRUCTION OF FORT DEARBORN

A Century of Progress In Medicine

An Editorial

FOR THE FIRST TIME in the history of international expositions, organized medicine, dentistry and pharmacy are presenting to the world, at the Chicago Century of Progress exposition, the great story of the contribution of medicine to the progress of civilization. Without the contributions of public health and of medicine the great cities of today, the magnificent industrial organizations, the accomplishments in transportation, in agriculture and indeed in every phase of human activity would have been impossible. Hence it is especially fortunate that the millions of people who are expected to visit the exposition will be able to see at first hand many of the processes by which medicine has arrived at its present high estate and many exhibits of its remarkable results.

MEDICINE has advanced more in the last fifty years than in all the previous centuries of the life of civilized man. Little is it realized, however, that much of this great advancement of the last fifty years is correlated with inventions and discoveries made in the basic sciences, which also are to be thoroughly explained to the public in this exposition. The structure of a molecule seems to the average man to be of little importance in relationship to the saving of human life. When, however, a chemist moves one of the components of a molecule from one point in its structure to another and thereby develops a drug with specific virtues against a disease that has devastated man for the last four centuries, the interior elements of a molecule become of considerable significance.

The nucleus of the scientific exhibits in the Century of Progress exposition will be a series of exhibits brought from the great Hygienic Museum at Dresden. Particularly interesting is the transparent man, a life-sized model of a human being in which each of the organs may be illuminated so that their position in the body and their relationship to other organs and tissues is apparent. Other exhibits in this section indicate the nature of the construction of the joints, the ways in which the head moves and rotates, the manner in which blood corpuscles circulate throughout the body, the way in which the diaphragm and the large muscles of the chest cooperate in breathing, the mechanism of the human voice and similar demonstrations. Many of these are so arranged that the visitor himself may manipulate the devices and study them in detail at his leisure.

FROM THE GREAT Wellcome Research Institute in London comes a series of historical exhibits dealing with the ways in which modern scientific medicine controls tropical diseases, and particularly the infections of man and animals. The life of Pasteur is displayed by a series of illuminated maps and photographs; the work of Robert Koch constitutes another series. Italy proudly exhibits the contributions of the great anatomists of the Middle Ages who were the first to bring medicine out of the darkness under which it had labored for 1,200 years. Austria devotes its exhibits chiefly to the work of Semmelweis, the great investigator who forced the medical world to believe him when he insisted that infection in women during childbirth could be controlled. Holland reveals the structure and function of the nervous system as developed in recent years by its outstanding institute for research on the brain. McGill University of Canada devotes its exhibit largely to the contribution to medical science of the great modern patron saint of clinical medicine, Sir William Osler.

These exhibits by foreign agencies are to be supplemented by a large series of displays under the auspices of American medical organizations. It is proposed to trace the development in the work of the individual physician from the days of the saddle-bag doctor to the highly technical procedures used by the modern physician. One hundred years ago the physician was dependent primarily on his unaided five senses and on his

knowledge of the causes of disease for aid in diagnosis. For treatment he used a few natural agencies and a vast array of drugs of unestablished potency and efficiency. Today every one of the senses of man has been extended by the development of physics, chemistry and bacteriology. There are devices by which practically every tissue of the human body is made visible, and apparatus for looking into the body cavities.

Pharmacy today depends on preparations of established virtue in the treatment of specific diseases. Many of the glands of internal secretion have been studied and specific principles isolated which, when they are administered, control deficiencies. The vitamins are found to be of value for health and growth, and may be administered to the human being in many ways to supplement deficient diets. All these discoveries will be shown from the historical point of view and their application will be demonstrated.

Just as foreign universities will reveal the contributions of many great names of the past, so will American institutions trace the contributions of the founder of modern physiology, William Beaumont, who published his clinical investigations of the stomach of Alexis St. Martin in 1833. St. Martin was injured by the premature explosion of a shotgun while in a store owned by Kinzie and Hubbard, two men who signed the first charter of the city of Chicago in 1833. There will be demonstrations of the growth of physiology, of the first application of ether as an anesthetic, of the first application of insulin for diabetes and of liver extract for anemia. There will be displays of the rehabilitation of the injured, crippled, blind and deafened.

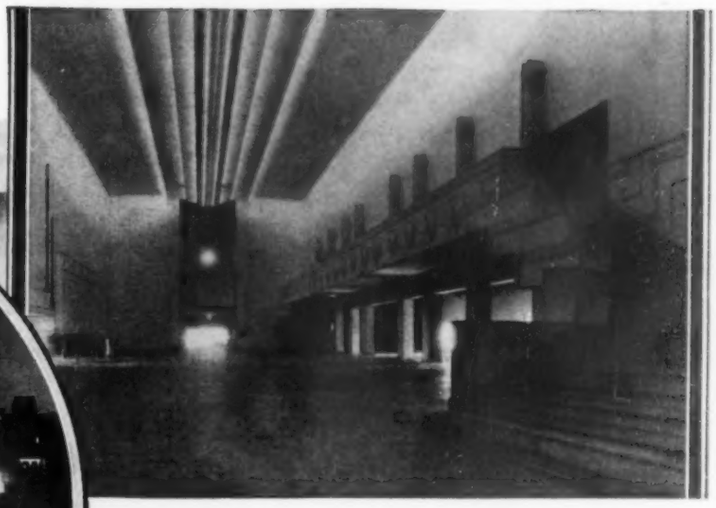
Dentistry will be fully elucidated in a great space full of historical and practical demonstrations. Many of the greatest medical industries of the country will tell the story of the advancement of scientific medicine, including such phases as the relief of pain, the service to the sick, the story of antisepsis and asepsis in surgery, the control of infections, the increasing knowledge of hormones and industrial products, and particularly the development of pharmacy from the medieval herb doctor to the million dollar industries of our modern era.

The American Medical Association holds its Annual Session in Milwaukee during the week from June 12 to 18. The week following is to be medical week at the World's Fair. During that week the American Association for the Advancement of Science and several other medical organizations will meet in Chicago. Among the great scientists from abroad who will read papers in this session are the following: A. V. Hill, University College, London; R. Goldschmidt, Kaiser Wilhelm Institut, Berlin; August Krogh, University of Copenhagen; Joseph Barcroft, Cambridge University, England; Filippo Bottazzi, University of Naples; C. U. A. Kappers, Central Institute for Brain Research, Amsterdam, and Constantin Levaditi, Institut Pasteur, Paris.

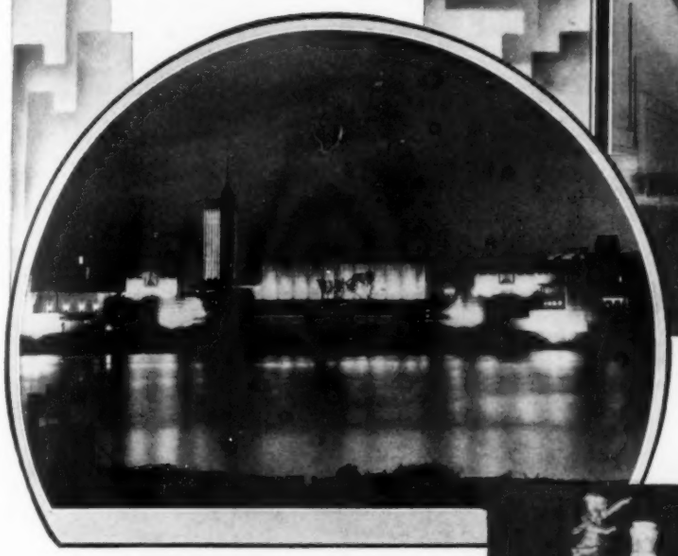
THE TRANSPARENT MAN
A Life Size Model Which Is Illuminated to Reveal the Positions of All the Internal Organs

A public meeting has been arranged at which papers will be read by Paul Dudley White of Boston on heart disease; Max Cutler, Chicago, on the control of cancer, and Morris Fishbein, Editor of HYGEIA, on the frontiers of medicine. It is expected also that Madam Curie will on this occasion say something about the development of radium.

A century of progress in medicine tells some of the greatest stories of human advancement that could possibly be told. It has meant the prolongation of life by more than thirty years for the vast majority of human beings. It has meant the freeing of mankind from the fear of pain, disease and death. To see, to hear and to participate in such a demonstration should be an epoch-marking event in the life of every human being fortunate enough to take part.

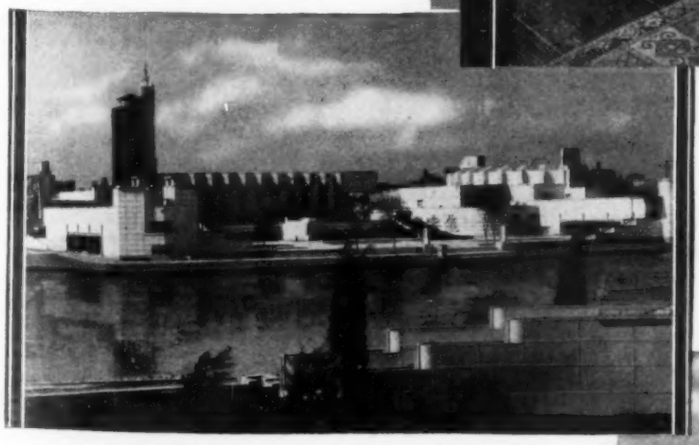


THE GREAT HALL
FOR
EXHIBITS OF PURE SCIENCE

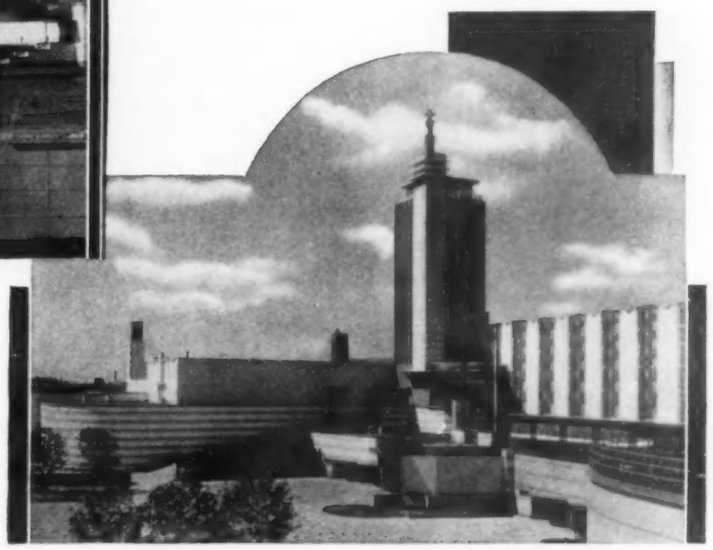


A VISTA IN LIGHT SEEN FROM
NORTHERLY ISLAND

A MEDIEVAL PHARMACY EXHIBIT BY
E. R. SQUIBB & SONS



THE FACADE OF THE HALL OF SCIENCE VIEWED
FROM SOLDIERS' FIELD



THE COURT OF THE HALL OF SCIENCE

Springfield City Hospital

The modern hospital commemorates past work and dedicates itself to service for the benefit of man.

The Modern Hospital:

A Human Repair Shop

By J. H. J. UPHAM

MONUMENTS have had a recognized part in the world's history and have always been symbolic of a quality greater than the actual figure or edifice. In years past, they were used largely either for civic adornment or for the glorification of heroes, public benefactors or great victories. The lines inscribed on these monuments, proclaiming the deeds of statesmen or philanthropists, still incite one to thoughts of admiration and emulation. Monuments in modern times also hold great spiritual meaning; today, however, their form has changed so that, while beauty has not been lost sight of, and commemoration and glorification have not been lessened, the thought of benefit and utility to the community has been added.

To me, a new hospital is in the best sense such a monument. It commemorates the self denial and earnest work of its founders; it glorifies through the years the community spirit, it heightens the quality of medical practice and proves directly and indirectly a benefit to every citizen, whether or not he enters its portals.

I wonder how many laymen fully understand the significance of a modern hospital. Some, perhaps, think of it chiefly in its physical aspects as a civic adornment and as a place of convenience for treating the sick. It is certainly all that.

The practice of medicine has changed greatly in the last generation or two. Many of the old diseases have disappeared, and new ones, the result of modern complicated civilization, have taken their place. New discoveries of disease processes have opened new methods of diagnosis and treatment. The great resources of chemistry have yielded means of understanding the workings of diseases in the body and have produced substances to combat them; electricity has been harnessed in man's service, and instruments of precision are being constantly added to his armamentarium.

As I look back on the days of my early practice of medicine in the nineties, I realize that the offices and equipment of even the most advanced practitioners were meager indeed in comparison with those of any successful physician today. Usually there was the waiting room and a small consulting room. In the consulting room was a desk, perhaps in the more

progressive, an examining table, a rack with a few test tubes, an alcohol lamp, and shelves for bottles of drugs, many of which would now be strange both in name and in composition. There was always in evidence the little black bag stuffed to overflowing with bandages, gauze, cotton, a splint or two, a stethescope, obstetric forceps and a medicine case. Simple as this equipment seems today, it met the requirements of those times remarkably well for the majority of cases. It was true then, as it is probably true today, that about 80 per cent of ordinary illnesses tend toward recovery, and simple methods of diagnosis and treatment are all that are necessary for their successful management. The remaining 20 per cent, however, often challenge to the utmost the resources of modern medical science in their recognition and treatment, and in too large a percentage this challenge is still unsuccessfully met.

Science Slays Its Goliaths

In former times, there was a fatalistic feeling toward these diseases, and the medical profession too often felt absolutely helpless. A different spirit prevails today; one after another of formerly hopeless afflictions has yielded to modern science. The average span of human life has been lengthened more than twenty years. The death rate has been steadily lowered, and the health of modern communities has been marvelously improved.

To keep up this record of achievement is the aim and ambition of the medical profession, but it cannot do the work alone. The doctors must have the proper equipment and facilities to aid them in this never ceasing fight against these enemies of mankind.

Modern medicine has become so complex that no one man can master all its branches; likewise no one office can contain all the equipment and facilities for diagnosing and treating many of these more obscure conditions.

The aim of the modern hospital is to supply this deficiency. It is not its purpose to promote selfish consideration for doctors or financial gain; its aim is rather to furnish the means of the better recognition of ailments and to point more clearly the way of proper treatment. It provides x-ray equipment that few doctors, if any, could have or maintain. It supplies an expert to operate these potentially dangerous machines and to interpret the observations. The x-rays are a power for both good and evil; improperly used, they are a source of danger to the patient and the operator, as sad experience has shown. Skill and experience are needed both for the proper making of the picture and for its interpretation. A poor film or one not properly interpreted may lead to errors of diagnosis which may easily be disastrous.

Further, a hospital provides the various laboratories and examining rooms with instruments of precision, all for the purpose of making better diagnoses. These are essential in modern medical practice.

I have referred chiefly to these facilities for recognizing disease rather than to the well equipped operating rooms, the comfortable bedrooms and wards, the drug department, the diet kitchen and other provisions for treatment. I do this intentionally to emphasize the fact that the first aim of the modern physician should be to ascertain what exactly is the matter with his patient, how much the organs are damaged and how much he can depend on the natural vital forces remaining. With these data in hand, treatment becomes greatly simplified and better results are assured.

To my mind, the present-day hospital may be likened to a machine repair shop. The well equipped repair shop inspires a feeling of trust in the mind of the motorist who leaves his car there for repairs; confidence in the workmen's skill affords assurance of satisfactory results.

Hospitals are human repair shops, and the facilities for recognition of the character and extent of the damages are as essential as the facilities for treatment. As Harvey Cushing said in his address at the Ether Day Commemoration in the Massachusetts General Hospital some years ago, "A hospital must be more than a well kept boarding house for the indigent sick, for experience has long shown that such a one too often becomes the plaything for politicians and a habitat for drones and weaklings."

The Hospital Acts as Educator

There is another thought mentioned in Cushing's address which has been even more strongly stressed by many others in the past decade; that is, every hospital has the potentiality of a great teaching influence. This has become so generally recognized that the American Medical Association maintains a bureau for the purpose of frequently inspecting all the hospitals of the country and classifying them as acceptable or as unacceptable for intern service. Thus the acceptable hospital has a definite status in the scheme of medical education of future practitioners; but in addition there is the equally well recognized influence it has on those already in practice.

Medical knowledge is constantly increasing; medical science is ever progressing. The graduate who feels that he has finished his medical education when he receives his diploma does not play a worthy part in the practice of his profession. Constant reading and continual study are essential if he is to keep abreast of the times; in no way can this education be better extended and supplemented than by contact with a hospital.

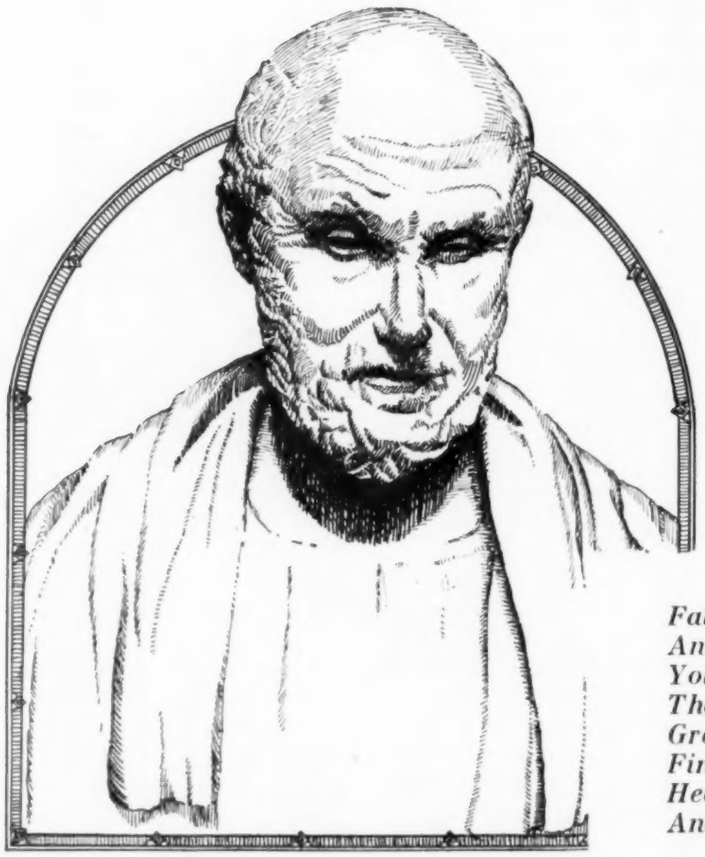
In his address, Cushing referred to the fact that hospitals in time acquire a definite personality, just as individuals have. Almost every

one and particularly members of the medical profession are familiar with the reputations of such institutions as the ancient Hôtel-Dieu in Paris, founded in the middle of the seventh century; the Allgemeines Krankenhaus in Vienna; the old Charité in Berlin, and St. Bartholomew in London, which was founded by a king's jester. And when I say founded, I mean more than the word usually conveys. For when, in irony, the king granted to Rohere, the jester, an apparently worthless tract of marshy land for his avowed purpose of building a hospital, Rohere himself dug the ditches to drain it, hewed the stones and laid the mortar to erect the crude beginning of an institution which has come down through the centuries and is affectionately known as "Old Bart's."

In this country, do not such names as Massachusetts General Hospital in Boston, Bellevue Hospital in New York, Philadelphia General Hospital, familiarly known as "Old Blockley," and Johns Hopkins Hospital in Baltimore mean a great deal? On what are their reputations based? Can it be on the beauty of their structure? No, for though some have a certain distinction of age, most are horrors architecturally. They are so well and favorably known and revered solely because of the character of the medical science to which they have contributed so greatly and the benefits which have been derived by their communities and the world.

What sort of personality will the hospital acquire? This depends chiefly on the character of the service of the attending physicians. An important share in this responsibility rests on city officials and further on all citizens. It would be the height of folly to invest the necessary capital in an institution and then by a sense of false economy hamper its proper use.

Remember that a hospital is a human repair shop, not a mere lodging for sick people. The earning capacity lost during illness amounts to a startling sum annually in every community. The aid in shortening the period of sickness by such an institution is its offering toward cutting down this terrific economic loss; this should be taken into account in considering the balance sheet.



Hippocrates

By

Clarence Edwin Flynn

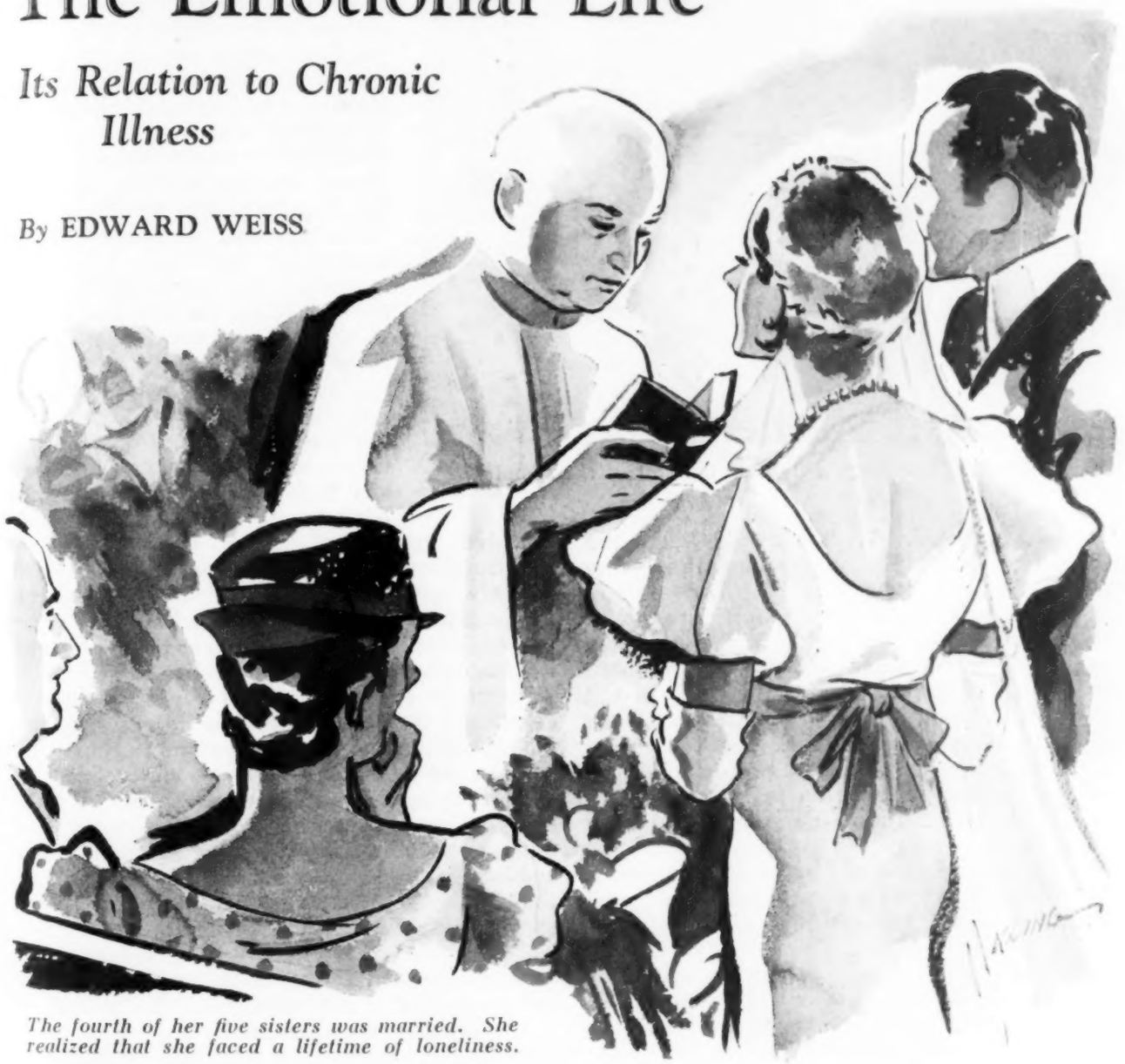
Father of Medicine, if you should come today
And congregate from everywhere your own,
You would discover in a father's way
That through the years your family has grown.
Great hospitals are standing everywhere;
Fine clinics wait to serve the sons of pain;
Healing, to high and low, physicians bear,
And nurses come and go in endless train.

Perhaps you know; perhaps above all these
Your shadow bends, a smile upon your face
To see that all these fighters of disease
Are here to render service in your place,
And that upon the labor and the fame
Of each has Destiny inscribed your name.

The Emotional Life

Its Relation to Chronic Illness

By EDWARD WEISS



The fourth of her five sisters was married. She realized that she faced a lifetime of loneliness.

EVERY ONE is familiar with, and wary of, the chronic sufferers who have been ill for many years and who give a detailed account of their symptoms on every possible occasion. They are the persons generally referred to as "enjoying chronic illness," and usually they outlive their patient listeners. They are prone to develop fashionable diseases. For a long period of time, chronic appendicitis was a favored diagnosis; later came floating kidneys, and still later the lazy colon and autointoxication. The wealthier sufferers were drawn to European spas because of their blood pressure and their gallbladders. The less important ones remained at home and succumbed to the removal of teeth and tonsils.

One of the first fallacies to combat is that these are diseases which affect only the idle rich; attendance in the hospital clinics will convince any one that they are just as common there. It is not correct either to believe, as do many laymen and, I fear, some doctors also, that people really consciously enjoy these incapacitating illnesses, that the ailments are imaginary or the result of pure deviltry or malingering.

Even though the physician understands the nature of such an illness, he often finds himself unable to give a satisfactory explanation to the patient. This is so because of the difficulty in expressing what is meant by the word "mind." Slapping the patient on the back, with the statement, "It's all in your mind; forget it," is cer-

The chronic sufferer gives a detailed account of the symptoms.

tain to be resented. With a rueful laugh the sufferer inquires, "Do you mean I'm going crazy?" To say that the condition is emotional in origin may likewise be difficult to explain. Both of these terms are liable to bring up the fatal word "imaginary," and that is resented more than anything and justifiably so. "I tell you this is not imaginary," the patient will say, and he is perfectly right. The illness represents a reaction to the sum total of the individual's whole life and experience up to that time, and its cause is to be found deep rooted in the personality.

A great many brave and worthwhile persons suffer illnesses which are not due to physical causes, and no one but the immediate members of their families and sometimes only their physicians know the extent of their sufferings or how courageously they carry on in spite of them.

The following case illustrates the part the emotional life may play in illness: A young woman at the age of 19 had her first attack of pain in the lower portion of the abdomen. At 20 the appendix was removed. Six months later she had a pelvic operation for so-called inward trouble. At 26 she had her third operation for abdominal adhesions. For the last four years she had complained more or less constantly and had been in bed for considerable periods because of the pain in the right side. Disease of the right kidney was suspected but not proved, and finally after a great deal of hospital investigation a fourth operation was performed in the belief that there was disease of the large intestine, but it was found that all the organs were normal.

Here then was a patient who had been practically incapacitated for five years and who during this period of time had been repeatedly subjected to searching physical investigations and many abdominal operations. No satisfactory cause had been found, and the patient still complained; indeed, she grew worse. It is hardly to be wondered at that certain advisers bluntly dismissed her illness as imaginary, and her friends and long-suffering relatives were almost convinced of the truth of this assertion. But the illness was not imaginary; the patient did not enjoy her suffering. What the many physical examinations and the varied operations had failed to disclose was the fact that this long illness began shortly after the fourth of her five sisters married, and this patient faced the realization that she would in all likelihood remain a spinster and would have to endure a lifetime of drudgery and comparative loneliness. Meek and submissive, unattractive and unintelligent, she unconsciously turned to illness when she found it impossible to compete with her sisters' superiority. Her invalid reaction was brought about, therefore, by this unhappy realization.

Marriage problems are a fertile source of emotional tension, giving rise to physical ailments. A young lady consulted a physician because of a digestive disturbance. She had been thoroughly examined previously; a diagnosis of chronic appendicitis had been made, and an operation had been recommended. Discussion with the young lady disclosed the fact that aside from her indigestion she had been much disturbed over a period of several months as to whether or not to marry a certain young man. It was apparent that her digestive disturbance had appeared during the period of stress of this unusual worry.

Now the problem of why this young lady became ill is not hard to understand. Modern psychology explains that an emotional conflict is converted by the patient into a physical symptom, which symbolically expresses the conflict. The patient herself is not consciously aware of her reaction's true meaning, and yet back of the whole thing is often a persistent desire to gain a particular point. But why the necessity for illness in the case under discussion? Why was this girl involved in a conflict which produced illness over the question of marriage? That is a far deeper problem, related to the whole lifetime training and experience, and dating back in its beginnings to the early days of childhood.

Such a person's childhood training is often unfortunate. Parents frequently try to realize their own unfulfilled ambitions in their chil-

dren. Frustrated themselves, they seek satisfaction in their children's successes. Children of such parents are often made the center of attention and begin to enjoy this superiority above all else and to make every effort to hold it. When a brother or sister comes along, these children are fiercely jealous and do anything to command attention. When they first enter school, they are unhappy. They miss the home where they are the central figures and, symptoms coming to the rescue, they succeed in regaining this friendly atmosphere. People speak of them as being "too sensitive" for school. They are shy and take responsibilities too seriously. Because they never learn to accept inferiority, to fail courageously, they live in a constant fear of failure. To be at peace with themselves, they must excel. They grow to demand not only superiority but absolute perfection as their goal in life. Their constant fear is lest they see themselves imperfect. As they grow older and the avoidance of mistakes becomes increasingly difficult, they restrict their world to those who look on them with special consideration. They play by themselves rather than with others. They grow up without the training for marriage which should result from the normal attractions toward the opposite sex. They are steeped in romance through their reading and day dreams, with considerable aid from the movies, and the realities of marriage therefore constitute a supreme danger for them. Sensing their own inadequacies, they nevertheless look for perfection in others and, failing to find it, they make every effort, usually wholly unconsciously, to escape from marriage. Often as in the case just cited, an illness comes to the rescue; as long as they are ill they cannot marry.

When they do succeed in forcing themselves to marry, they go through a difficult period of adjustment, and illness again comes to the rescue. Digestive and intestinal disturbances, symptoms simulating heart disease, and so-called "inward troubles" are some of the illnesses that aid them in escaping the responsibilities of marriage and may take them home again to mother. When children come to them, the whole vicious process is repeated: the unsatisfactory marriage relationship makes them seek emotional satisfaction in their children, and the indulgent mother or stern father again sows the seed for another spoiled life. As Eben Holden said of the man and his horse, "Got t'judge the owner as well as the hoss, and if there's anything the matter with his conscience it'll come out in the hoss somewhere." The same thing is true of parents and children. If the parents have a disturbance in their emotional lives, it is almost certain to show up clearly as some defect in the personality of the child.

Much has been said of the science of medicine; little more than vague generalizations have been advanced about the art of medicine. Medicine as a science usually includes the advances in knowledge of disease that have come about through laboratory investigations. Medicine as an art generally refers to the skill with which the seasoned practitioner handles his patients; it might be much better and more scientifically defined as the physician's ability to understand and use to good purpose the psychology of his patient.

A well known physician, addressing a meeting of doctors, recently said, "Medical service cannot be fabricated like an automobile. Curative medicine is not the fabrication or the assembling of parts. It is the study of disease in an individual with his own peculiar personality and hereditary background, under varying conditions of environment and financial competence. The patient's secretions may be analyzed, his temperature taken, physical examinations made and complete x-ray studies carried out. All these data can be put on cards so that the doctor has a complete record of the individual's physical state, but the patient cannot be cured or told how to live unless at some place in the final analysis there is a personal touch and a psychologic evaluation of the patient in regard to the advice that is given to him."

No field of medicine is exempt; every specialist must be willing and able to go beyond the physical confines of his specialty and to investigate the emotional life of his patients. Many a refractive error uncorrected by frequent changing of glasses is bound up with the emotional life of the individual. A great many cases of supposed heart disease characterized by pain and fatigue are related to the unsatisfactory adjustments of emotionally immature persons. One of the greatest causes of fatigue is not hard work but emotional conflict. It is not the hard-working business man with many interests, worries and responsibilities who complains of being constantly tired, but rather his wife, who has nothing to do but gossip and play bridge.

Much indigestion, of early life particularly, has to do with long-standing dissatisfactions in business, social or home life. A great many of the so-called inward troubles of women and symptoms referred to the reproductive organs of men are relieved not by operation or physical measures but by patiently digging out the emotional life of the individual. Sick people, and chronic sufferers in particular, must be willing to forsake the idea that an illness is necessarily of physical origin and must learn to disclose their innermost feelings to their physicians.

As Hawthorne, writing "The Scarlet Letter," said, "A bodily disease which we often think of as a thing apart and separate may, after all, be but a symptom of an illness in the spiritual part of our nature."

The Art of Vacationing

By T. D. Irwin
and
N. M. Hochberg

WITH THE OPEN season for vacations approaching, physicians throughout the land will soon be confronted with their periodic parade of patients seeking to recover from their annual holiday.

Among dozens of other victims of vacation foolishness there will stagger in Jane Smith. Every doctor has his Jane Smith.

"I'm feeling awfully tired, Doctor," she will say, "terribly run down. I go to bed at night and find that I am either sleepless or so fatigued that my sleep almost amounts to a state of unconsciousness. And whether one or the other is present, I invariably wake up in the morning feeling unrested and so tired that it's an effort to lift my head from the pillow and gather enough energy to go to business."

Questioning will reveal that the usual morning cup of coffee has been increased to two, that the day's work has been gone through in a daze and that all ambition and joy of life seem to have evaporated. The young lady is in a mental and physical slump. Examination discloses signs of nervousness and irritability, a tremor of the hand, a mild secondary anemia but nothing organically wrong.

The wise clinician, proceeding to delve into the recent history of his patient, minutely questions the manner in which the late to-be-lamented vacation had been spent. The detailed account of only the first day of the holiday will read like a saturnalia: three sets of tennis, an hour of horseback riding, a seven mile hike, a swim across the lake, nine holes of golf, three hours of dancing in the evening, and overindulgence in food, bridge or guzzling bouts often until dawn, with a few hours of rest snatched somehow before the next hectic round resumed its course.

Like many thousands of others, Jane had striven to stuff every pleasure within reach into the limited two week period allotted to her each year. No wonder she needed not only a physician but a real vacation when her holiday was over!

Extraordinary among his foibles is this peculiar inability of the American adult to take "time off" from his yearly labors in a manner that is sane and beneficial to his mental and physical health. To a physician who too often has sadly marked the widespread illiteracy in certain matters pertaining to health, there are few subjects in which the average person is less educated than the not-too-simple art of how to take a vacation.

It was Depew who said that one could do a good year's work in eleven months but never in twelve. There is little doubt, then, that a vacation is as much a necessity as is a good night's sleep. But, the question arises, what constitutes an authentic vacation?

From both a medical and a common-sense point of view, a vacation should be a period of mental and physical rest, with a change of scene if possible for this is always mentally refreshing, and companionship that is agreeable. An effort should be made to correct any mental or physical deficiencies and strains that exist in the individual. No two persons require the same type of vacation. It would be utterly ridiculous, for example, to say that a piano mover or a coal heaver needs strenuous exercise during a period of vacation. It would be equally absurd to think that a mental creature occupying a white collar job whose most arduous exercise for fifty weeks in the year consists of riding in the subway will suddenly bloom forth into a Tilden, a Jones or a Weissmuller.

It is, then, up to each person to take stock of his physical capabilities and requirements, and then to map out a program in which a moderate amount of exercise is permitted without putting undue stress on a physical system which is unaccustomed to it. Truly, the arteries and heart of youth are elastic and will stand much stress and wear. But any violation of the physical potency of a human being, unless graded over a prolonged period of time so as to accustom the heart and general physical economy of that person, must obviously be wrong.

The male, in going on a vacation, should take cognizance first of his height-weight proportion. Does he wish to gain or to reduce? Has he been a person ordinarily accustomed to strenuous athletic exercise or has his life been sedentary? Is he mentally and physically tired from a year's work, or is he feeling perfectly well but simply trying to add to his pleasures? Cognizance of these facts will of necessity give their obvious answers.

Women, in turn, should take inventory of their physical status. The present fashions apparently call for slenderness. That this slenderness can be and is being paid for in terms of anemia, tuberculosis and nervous debility is a matter of almost universal knowledge. It is the stout woman, evidently, who goes to the country with the determined purpose of reducing. She promptly sets out to put in as much physical stress and labor as is humanly possible, in the erroneous belief that physical exercise is in itself a cause of weight reduction.

The time to take a vacation has long been a moot question; and whether the vacation should be taken in one dose or in a series of week-ends, for example, has been another. For the general run of working human beings, there is no question: the annual recess must be accepted when, as, and if it is available. For the person so fortunate as to be able to choose his time and manner, vacations of three weeks or more in midsummer and half a dozen week-ends during the year perhaps approach the ideal. There are those who believe that the recess should not be taken in summer, owing to the strenuousness of vacationing and the fact that it brings the individual back to his labors while the heat is still at its zenith. Clearly, if the choice lies between laboring and reposing during the hot spells, all votes should be cast for reposing. It may not be perfect, but it is generally the best that can be offered under the circumstances.

The mental phase of vacationing should be the subject of some thought for any person intending to go on a vacation. Man is truly a gregarious animal and requires a number of his own kind about him. But each of us is, after all, unto himself a pure entity. One should consult one's own disposition in making up one's mind as to what type of vacation will best suit. The business of going away from home with a personal friend is often done. Unless one has been accustomed to living and sharing quarters with that person for any reasonable length of time, one usually finds out that the perfect friend of the city may be a nuisance to put up with in the close comradeship of a hotel room over a period of weeks. It is, after all, only sane selfishness to take care primarily of one-

For the husband and wife who are compatible, a vacation need not mean a separation but merely a change of scene.

A person unaccustomed to exercise should not attempt prolonged, strenuous physical endeavor.

self, because that is the purpose of the vacation. And if the friend is of an ailing, querulous nature, that fact will do much to eliminate the atmosphere of rest and quiet which is so necessary.

The question of huband and wife going on vacations separately has been brought up often before. While a lapse in routine is perhaps to be desired, it is a question whether two human beings who presumably are in accord with each other need to do more than merely change the atmosphere surrounding them. In other words, there is to be a change, but even though they go together, that change still takes place for both simultaneously. They best know whether they will both be able to acclimate themselves to this temporary change while they are together. If both have found the year burdensome and have come to the point where they grate on each other's nerves, then by all means, a separate vacation is to be preferred. If not, there is neither a necessity nor a place for this separation.

"Where shall we go?" This popular early summer theme song of the prospective vacationist, the innocent cause of many a family quarrel and subsequent divorce, is really important enough to merit the lengthy consideration it occasionally receives. What is one man's food is another man's poison. For the stout person, contrary to the beliefs of the layman, the seashore is the best locality. It is also the place of choice for any person suffering from heart trouble or from certain rheumatic ailments. For the patient with a weak chest who is subject to coughs and colds, mountain resorts are, by all means, ideal.

There has been a great tendency among Americans of recent years to go on motor trips and to camp outdoors. Unless a person is in the pink of physical health, able to stand the tedium and the grind of daily making and breaking camp, and thoroughly conversant with camp life and its dangers, such as questionable water supplies and garbage disposal, this type of vacation is probably the worst that could be selected.

The sedentary person accustomed to service all his life must not lay out too ambitious a program. A certain amount of exercise is by all means to be desired, but it should be limited to the less strenuous forms, such as walking, motor rides, an occasional set of tennis, and horseback riding if the person is accustomed to it.

The matter of reduction here has its place. The general public has been accustomed to the absolutely erroneous idea that strenuous exercise will take off flesh. That is not true. The medical way to reduce consists of several phases. Primarily, there is the matter of rest, which is absolutely necessary because the body requires less food intake when it is not in action. Next in significance is diet. No person can reduce unless the consumption of food is definitely restricted to below body requirements, thereby compelling the physical mechanism to live at its own expense.

In this respect a phase of metabolism should be considered. Metabolism is really the basic economy of the body, or the balance struck between the intake of food and the output of energy derived from that food. In other words, a person who takes in a certain quantity of food and performs a certain amount of exercise uses up all that food, in which case his weight remains at a standstill, or uses less than the intake, in which case he gains weight, or more than the intake, resulting in a loss of weight. In the last instance, exercise as a reducing factor should really be prohibited because exercise, while it does create a rapid oxygenation of tissue, also creates a void which manifests itself

in a sense of hunger. In the final analysis, the balance remains in favor of the intake. For example, a person attempting to reduce puts in a strenuous two or three hours at play as, for instance, at tennis. At the end of that time, he has perspired to a considerable extent and has by virtue of his exercise created a sense of hunger and thirst which, when satisfied by a hearty meal and as much water as desired, has not only made up the deficit in tissue but has increased his weight by a definite poundage. This leads to the next factor, water balance.

Another fact of which the average individual is unaware is that there is found in the human body a definite balance between the water intake and output. All foods are, to a considerable extent, composed of water. The excess of water in the tissue, existing between the intake and output, is usually taken care of by the various forms of human excreta as well as by the sweat. Certain persons have a tendency to retain water in the tissues, and what they believe is flesh or fat is really nothing but a form of tissue water retention. In serious ailments, such as heart disease, when this water retention becomes obvious, there is present what is popularly called dropsy. But in cases in which this water balance is not disturbed to such a considerable extent, the person may be totally unaware of it. Certain foods have a tendency to aid in the retention of water. The greatest offenders among those foods are the gravies, the heavily spiced foods and, most of all, salt.

The solution of the problem of reduction, then, resolves itself into the following: Assuming that a person weighing 150 pounds feels that he is 10 per cent above weight, that 10 per cent being represented concretely by 15 pounds, the obvious way to reduce would be as follows:

1. The food consumption should be cut down by 10 per cent.

2. As much rest as possible should be taken so that the body mechanism can adjust itself to this reduction, as it will require less intake than usual.

3. Spices and salt excess must be avoided.

4. Only as much water should be drunk as is absolutely necessary for the maintenance of body comfort and needs.

For the person who is underweight and anemic, the problem is that of the necessity of adding both blood and tissue. Evidently, rapid oxygenation by strenuous exercise is certainly unnecessary, for that would be adding insult to injury. The treatment of this condition involves four phases:

1. Overfeeding: Six small meals a day are more desirable than three large ones. Frequent feedings of small quantities are better tolerated by an undernourished person whose system has become unaccustomed to large intake than are three full meals. This means more than the ordinary requirements. The food consumed should be of the bland variety and easily digestible, including butter, milk, cream, eggs, cereals, fruit juices, fresh vegetables, meat in moderation and breadstuffs.

2. Exercise: For this type of person exercise should be taken in small doses and never to the point of fatigue. Walking and golf are perhaps among the least interdictable forms of physical endeavor.

3. Bathing: This is perhaps the most splendid weapon in the armamentarium of medicine to combat the nervous exhaustion which goes with underweight and debility. Cold sponges, salt rubs, fresh and salt water bathing are all to be desired. Bathing does not mean strenuous swimming and can be done just as well in a bathtub or a lake as at the ocean.

4. Rest: As much rest as possible should be taken. This means not only physical but mental rest.

Various types of vacations have their own discomforts, dangers and superstitions. At the seashore, for example, care should be taken against overexertion in swimming. Not every heart can stand strenuous swimming for a prolonged time and some hearts cannot tolerate it even for a short time. It is the duty of the vacationist to know his own condition before he attempts any excesses of this sort. Then there is the warning against entering the water too soon after a heavy meal, which fortunately is now too well known to require added comment.

To lie in the sand after coming out of the water may probably prove harmless if the day is warm and the bathing suit dries quickly. But if the day is sultry, without direct sunlight, lying in a soggy bathing suit for any length of time offers every chance for the development of a bronchial condition, such as bronchitis or even ultimate pneumonia. The ideal way would be to get out of the water, take a brisk rub-down, change to a dry bathing suit, and then stay on the beach as long as one desired.

Perhaps the most important thing to be considered in bathing is the care of the ears. Any device that protects the ear-drums while in the water should be used and is highly to be recommended. Another warning which should be heeded is that one should avoid sniffing or inhaling salt water through the nose while in the water. If the nose becomes clogged with salt water, blow out; do not sniff in. The danger lies in getting water into the eustachian tubes which communicate between the nose and the ears. Many a case of mastoiditis owes its inception to exactly this habit of sniffing.

Assuming that it is necessary to be in style, one may admit the necessity for "sun-tan." If it must be acquired, it should be done in small doses. In the first place, not all skins can become sun tanned. A fair skin that has an insufficiency of melanin (coloring matter in the skin) does not tan. It simply burns and peels. The type of skin that can acquire a sun-tan should be exposed for only short periods with sufficient intervals for acclimation. Persons who are continuously exposed to weather get a toughened skin but only as an acquirement of months and years. The actinic rays of the sun are not without their dangers. Sunstroke and heat exhaustion are two common dangers. And lastly, a fact of which most persons are unaware is that a severe burn often leads to ulcer of the stomach. Moreover, a severe burn of one third of the body spells death. In other words, when the skin of the body has been involved to the extent of one third of its area and the burn is of second degree character, indicated by the formation of blisters and peeling of the skin, that burn often proves fatal.

For the vacationist going abroad, a few words should be in order concerning seasickness. Contrary to popular belief, seasickness is not, per se, a stomach condition. It is caused by the rapid changes in motion of the vessel, giving the victim a sense of instability or lack of body balance, with the consequent nausea that is the cardinal symptom of this condition. In the human ear there are three canals called the semicircular canals, each one of which represents a definite plane: height, width and depth. These canals contain fluid; and as fluid always seeks its own level, the sense of balance is maintained in the human being when this fluid levels itself and communicates the impression of position in space, through sensory cells in the ear, to the brain. If the ship tosses rapidly and in a number of planes, this fluid in the canals is agitated to such an extent that it causes what really amounts to a conflict of impressions of balance. This acts on the nervous system and produces the nausea that is so characteristic.

Prevention is rather simple. If a person uses a few doses of bromides or any other sedative before coming on board, his nervous perceptibility will be lowered to such an extent that it will naturally take more joggling to cause the same effect than would happen if he had not taken the sedative. Sobriety and restraint in food and drink will eliminate at least 50 per cent of all the symptoms, because nausea cannot make an empty stomach vomit what it does not contain.

Some persons are seasick from the moment they step on board till they hit dry land. Others, again, having overcome the initial illness, promptly recover; for them no further warnings are necessary. They begin to feel well, get a sense of hunger, and if they will not follow the dictates of their stomachs but leave the table while they feel that they can still eat a little more rather than that they have had too much, all will be well. After the illness is over, as much fresh air as possible should be taken by means of walks on deck.

In summing up the scope of this article, certain conclusions should be emphasized:

1. Vacations are necessary.

2. Vacationing should be specialized to suit the person's needs and desires.

3. In all things, moderation should be used. One cannot overnight subject a body that has been softened by continuous sedentary existence and the luxuries of civilization to terrific strains and expect to escape without paying physical penalties. Therefore, exercises should be graded and should be used short of fatigue.

4. Stress must be laid against overeating. Fully 80 per cent of the patients treated by country doctors during the vacation period have simple cases of gastric upset caused by food excesses and food foolishness. Most persons eat at least 50 per cent more than their body requirements. Gluttony not only is punished immediately but is cumulative and brings disaster, mental and physical, in later years.

5. Regarding exercise, no hard and fast rule can be made. A person accustomed to competitive athletics all his life evidently need not curtail his exercise unless he desires an increase in weight. On the other hand, a person unaccustomed to any form of violent exercise, with the exception of strap-hanging in the subway, obviously should not attempt strenuous physical endeavor except in small doses and by steps so graduated as to leave him unexhausted.

Diarrhea of Infants

By W. McKim Marriott

IN A PAST GENERATION, diarrhea, especially that occurring during the summer months, was one of the most common and most dreaded of the conditions affecting infants. Fortunately, severe and fatal diarrhea is now becoming a relatively rare condition, and by utilization of knowledge already at one's disposal, it is possible largely to prevent diarrhea and also successfully to treat it when it does occur. Infants are more likely to develop diarrhea on slight provocation than are older children; diarrhea in infancy is also more apt to lead to serious consequences. Hence the importance of taking every precaution against the condition and of treating it promptly if it occurs is patent.

By diarrhea is meant the occurrence of an excessive number of bowel movements, which are more watery than normal stools and may differ in color. In some of the severe forms of diarrhea, pus and even blood may appear in the stools. The diarrhea may be associated with fever, vomiting and colicky pains in the bowels.

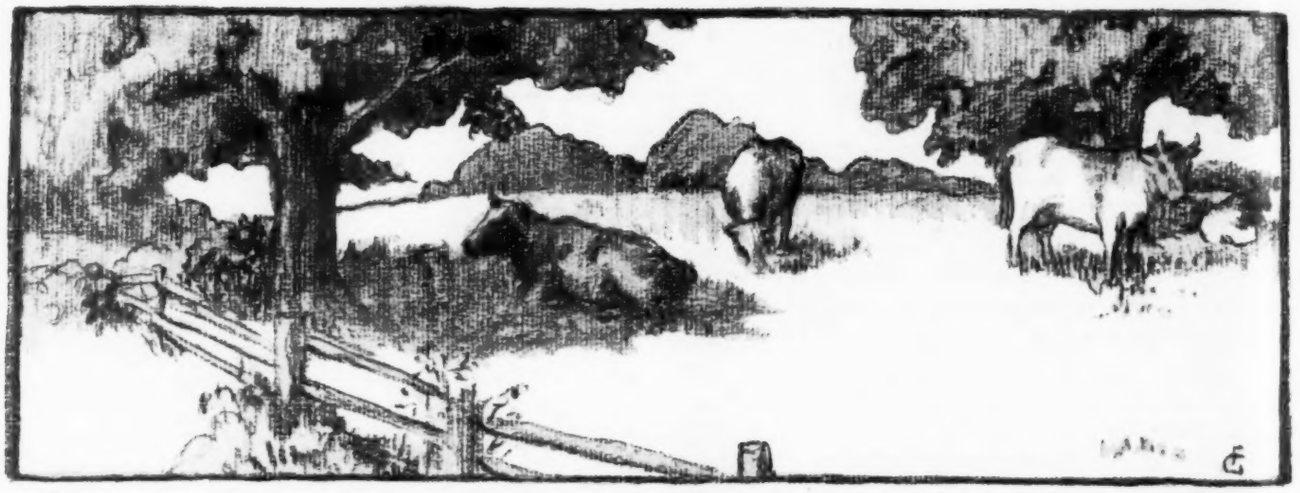
It is not possible to state just how many bowel movements a day are significant of diarrhea. Perfectly healthy babies show great individual differences in the number of bowel movements occurring daily and also in the character of the stools. Babies nursing at the breast usually have more numerous and softer stools than those who are bottle fed. Some infants have only one or two firm stools a day; others, in equally good health, regularly have five or six soft and even slightly greenish stools daily. Each infant is to be considered a law unto himself, and any sudden increase in the usual number of bowel movements or any change in the character of the stools is of significance. What may be diarrhea for one baby may be a perfectly normal condition for another.

Diarrhea may be of all degrees of severity. Almost every infant during the first year or two of life may have occasional loose stools and be none the worse for it. In others the diarrhea is more prolonged, the infant loses weight, may have some fever and is considerably weakened as a result. In still others the diarrhea may be severe, with the passage of large, watery stools and with the occurrence of high fever and even convulsions. It is not always possible at the start to tell how severe an attack of diarrhea is going to be. It is safer, therefore, always to consider diarrhea as a possibly serious condition and to treat it accordingly. No harm will be done if the attack is of mild type, but a good deal of harm may be done if a serious diarrhea is neglected in the early stages.

Diarrhea may be the result of a variety of causes. It occurs much more commonly during the summer months than at other seasons. The chief cause of diarrhea during hot weather is the presence of disease germs in the milk which may have multiplied by the millions if the milk has not been kept cold. If a baby is fortunate enough to receive milk directly from the mother's breasts, the milk is perfectly fresh and does not contain any of these harmful germs. It is for this reason that the baby who is nursed at the breast rarely suffers from severe diarrhea. Even the breast-fed baby may, however, take germs into his body if he is given impure water or articles of food which are not fresh and clean.

Contaminated cow's milk is the chief cause of summer diarrhea. During the process of milking, a certain number of germs always get into the milk. If the cows are not kept clean, if the milker's hands and the pails and bottles are dirty, or if the milk is allowed to stand uncovered, germs will get in. Almost all germs

Babies can stand a good deal of hot weather if they are not burdened with too many clothes.



Contaminated cow's milk is the chief cause of summer diarrhea.

multiply rapidly in milk unless the milk is kept cold. Fortunately, most of the germs in milk are quite harmless, but occasionally harmful ones get in, and they too multiply.

During hot weather, babies may suffer from diarrhea even when the food is clean. When the baby's body becomes overheated, he cannot digest food well, and consequently he is liable to suffer from diarrhea. Babies can stand a good deal of hot weather, however, if they are kept in well ventilated rooms, are given plenty of water to drink and are not burdened with too many clothes.

Fever has the same effect on a baby as hot weather. The baby with fever does not digest food well and is liable to have some diarrhea. One of the most frequent causes of fever in an infant is a cold in the head. Often the germs causing the cold pass from the throat up into the ears and at times down into the lungs, causing a bronchitis or pneumonia. Another common cause of fever in babies is the presence of germs in the bladder and kidneys. When diarrhea is the result of such infections, it is liable to continue unless the disease causing the fever is treated.

Diarrhea may result from giving the baby the wrong kind of food, even though the food is clean. The addition of too much sugar to the food of the bottle-fed baby or the use of rich milk or cream for making up the feedings may lead to diarrhea. Fortunately, mother's milk is almost always of suitable composition. Many of the patented baby foods contain entirely too much sugar for some babies.

Occasionally babies have diarrhea because they are not getting enough to eat; hence they become so undernourished and weak that they cannot digest food well.

It is easier to prevent diarrhea than to cure it, and fortunately diarrhea can usually be prevented through proper feeding and care of the baby. One of the best ways of preventing diarrhea is for a mother to nurse her baby. The milk from her breasts is fresh, clean and free from harmful germs; if the mother is healthy and strong and has plenty of milk, the baby will get enough to eat, so that he will not become undernourished. The baby who gets enough food of the proper kind and is strong and well nourished is less liable to pick up infections which may cause fever and lead to diarrhea.

If the mother is not fortunate enough to have sufficient milk, it will be necessary for the baby to be fed, at least in part, from the bottle. Bottle feeding can be made perfectly safe, and the baby properly fed from the bottle is not liable to suffer from diarrhea, provided certain precautions are taken.

If the baby is to be bottle fed, the formula should be prescribed by a physician so that it will contain the proper proportions of milk and sugar to nourish the baby and will be of such a strength as to be digestible. It is equally important that the formula should be made up so that there is no possibility of the presence of harmful germs. It is a mother's duty to see that the feedings are properly prepared. The first requisite is that the milk should be pure. It should come from a reliable dairy. It is usually better to use the mixed milk from a herd of cows than the milk from a single cow, as such milk is less likely to vary from day to day. Unless fresh milk or certified milk is easily obtainable, bottled pasteurized milk is to be preferred. Milk which may be all right at the time it is delivered will not be suitable for the baby unless it is kept cold and in clean vessels and used soon after delivery.

In making up the feedings, all utensils, including pitchers, saucepans, spoons, funnels and bottles, should be scrupulously clean and should be boiled and allowed to dry without being wiped before they are used. A dirty dish towel may contaminate a clean utensil. When the formula is being made up, a clean ironed towel or piece of cloth should be spread on the table on which the utensils are placed, for clean

utensils placed on a dirty table will become contaminated.

Even if the milk is believed to be pure, it is far safer to boil the formula for as long as three minutes after it has been made up. It should then be put in clean bottles, covered with rubber caps or with clean pieces of tissue paper held on by a rubber band, or stoppered with clean cotton or stoppers which have been boiled. The bottles should be kept in a refrigerator until they are to be used. Boiling the milk formula not only kills harmful germs but actually makes the milk more digestible. It does not change the food value of the milk and has a deleterious effect on only one of the vitamins (vitamin C). This vitamin is easily supplied in the form of orange juice or tomato juice, which should be given to all bottle-fed babies, whether or not the milk has been boiled.

Canned evaporated milk is a safe form of milk to use for preparing the baby's formula. This is not to be confused with condensed milk, which is a concentrated milk preserved with a large amount of sugar. Evaporated milk has been heated in the cans to a sufficiently high temperature to destroy all harmful germs. This heating also makes it somewhat more digestible. Evaporated milk is milk concentrated to about half its volume; hence in making up the formula, only half as much milk is used as in the case of bottled milk, for the difference is made up with water. Formulas made from evaporated milk do not need to be boiled, but in preparation of the formula, the water used should be boiled before it is mixed with the milk. When the baby's feeding is being made up, evaporated milk should not be used from a can which has been opened and allowed to stand, as it may have become contaminated. A fresh can should be opened for each day's feeding; when proper refrigeration is not available, each bottle may be made up just before use, a fresh can being used each time.

Powdered dried milk is another safe form of milk. Some dried milk has been partially skimmed before drying. An allowance for this must be made in preparing the formula. Dried milk is usually free from harmful germs and keeps well, provided the cans are kept closed.

Acidified or soured milk is often used for the feeding of babies, especially in the summer. One great advantage of this kind of milk is that harmful germs do not multiply in it as readily as in sweet milk. It is also easily digested. Ordinary sour milk, or farm-made buttermilk, should not be used, but the cultured milk of the dairies or milk to which lactic acid, citric acid or lemon juice has been added is satisfactory. The exact amount to be used should be prescribed by the physician.

If any specially prepared baby food is prescribed by the physician, the same precautions as to cleanliness must be observed as in the preparation of formulas from ordinary milk. Some special foods which contain acid, such as buttermilk preparations, cannot be boiled. In such cases the physician's directions for preparing should be followed exactly.

All water that is given to the baby should be boiled, cooled and kept in a clean receptacle, and such foods as cereals should be freshly cooked. The orange juice should be freshly squeezed. The baby should not be given pieces of cake, candy or tidbits from the table.

The baby who is fed at regular intervals is less liable to have diarrhea than the one who is fed irregularly or whenever he cries.

Forcing a baby to eat when he is not hungry is also liable to lead to indigestion, vomiting and diarrhea. If the baby does not seem to want all the milk in his bottle, he should not be made to take it. The remaining milk should be thrown away; it should not be set aside to be given later.

During hot weather a baby often has less appetite, and the giving of too much food is especially likely to lead to diarrhea. During hot weather the two important things to do are to keep the baby cool and to give him plenty of water. More babies are harmed by being overclothed than by being underclothed. If a baby is kept in a well ventilated place and all his clothes are removed during exceedingly hot weather, and if he is occasionally given a sponge bath with tepid water and offered plenty of water to drink, his body will not become overheated and hot weather will not do him any harm.

Keeping up the nutrition of the baby is a good means of preventing diarrhea. If a baby consistently fails to gain as much as 4 or 5 ounces

If the baby does not want all the milk in his bottle, he should not be made to take it.

a week, or if he is losing weight, something is wrong; either the feeding is insufficient or the baby is suffering from some disease. Babies sometimes gain slowly during hot weather and for temporary periods at other times; but if the baby gains poorly over a period of time, a medical examination should be made. If no disease is found, it may be that the baby is not receiving a sufficient amount of food. Unless this is remedied, he may become weakened, and diarrhea is more liable to develop.

When diarrhea occurs, the measures to be taken depend somewhat on the severity of the condition, how many and how loose the stools are, and whether or not fever is present. If the stools are just a little loose and the baby is not feverish, all that may be necessary is to diminish the amount of feeding. If the baby is nursed at the breast, the length of time that he nurses should be shortened, or water from a bottle may be given him immediately before the nursing, which will result in his taking less milk. For the bottle-fed baby, half or more of the formula may be replaced with water. In cases of diarrhea, the feeding of cod liver oil, cereals and other solid foods should be discontinued. It is often a good plan to leave out part or all of the sugar in the feeding or to make up the formula from milk from which the cream has been removed.

As the stools become less numerous, the customary feeding may gradually be resumed.

If the diarrhea is somewhat more severe or if fever is present, all feeding should be stopped and the baby should be given nothing but water or well cooked barley water. If a baby receives plenty of water, he can get along without food for a considerable time. The number of feedings which should be omitted will depend on the manner in which the baby reacts. If the diarrhea continues, it will be necessary to omit all feedings for a day or two and then to resume them gradually, permitting a shorter period of nursing at the breast or diluting the customary formula with water, leaving out part or all of the sugar and skimming the milk. If the diarrhea and fever continue, a physician should be consulted.

The presence of fever may mean that the diarrhea is not of the simple type but of a more serious variety known as dysentery, a disease which may continue many days and which requires special means of treatment. The fever may also mean that the baby has some infection in the nose, throat, ears or elsewhere which can be detected only through a thorough medical examination and which should be treated; otherwise the diarrhea will continue, regardless of the type of feeding.

During the course of severe diarrhea, a great deal of water is lost by way of the bowel, and the baby is liable to become dried out. This increases the fever and all the symptoms. It is necessary, therefore, that a baby suffering from diarrhea should take plenty of water. If there is a tendency to vomit, it may be difficult to give a sufficient amount of water. Small amounts at frequent intervals are often much better retained. The baby may be given water in small amounts of a few teaspoonfuls at brief intervals when he is awake. It is often necessary to give almost a quart of water a day to prevent drying out.

A good deal of harm is done through the injudicious use of cathartics in the treatment of diarrhea. When a baby has diarrhea, the bowels are likely to empty themselves quite completely without the aid of medicines. If a baby is known to have taken some spoiled milk or some unsuitable article of food, it would be well to give a dose of castor oil to remove the offending material before it has a chance to do harm; but once diarrhea has started and is profuse, the time for the giving of a cathartic is past. A single dose of castor oil just at the start of diarrhea may do no harm, but repeated doses of this or any other laxative, particularly calomel, are to be discouraged. Certainly no other drugs should be given except on a physician's recommendation.

It is therefore apparent that diarrhea can be prevented, and when it does occur it can be successfully treated.

The chief causes of diarrhea include impure milk and contaminated foods, overheating, fever from any cause, too much sugar or cream in the diet, overfeeding and underfeeding.

To prevent diarrhea, the following rules should be observed:

1. The milk supply should be clean and pure. Mother's milk is the safest food.
2. The baby's drinking water should be clean, pure and boiled.
3. Any other articles of food should be fresh and clean, and no unsuitable articles of food, such as cake and candy, should be given.
4. If a formula is used, it must be prepared with extreme attention to cleanliness and kept cold until used.
5. The baby should be fed at regular intervals and should not be forced to eat when he is not hungry.
6. The baby should be kept cool and comfortable in hot weather, should not be overclothed and should be given plenty of clean water to drink.
7. Any infections which develop in the nose, throat, ears or other organs should receive prompt attention by the physician.

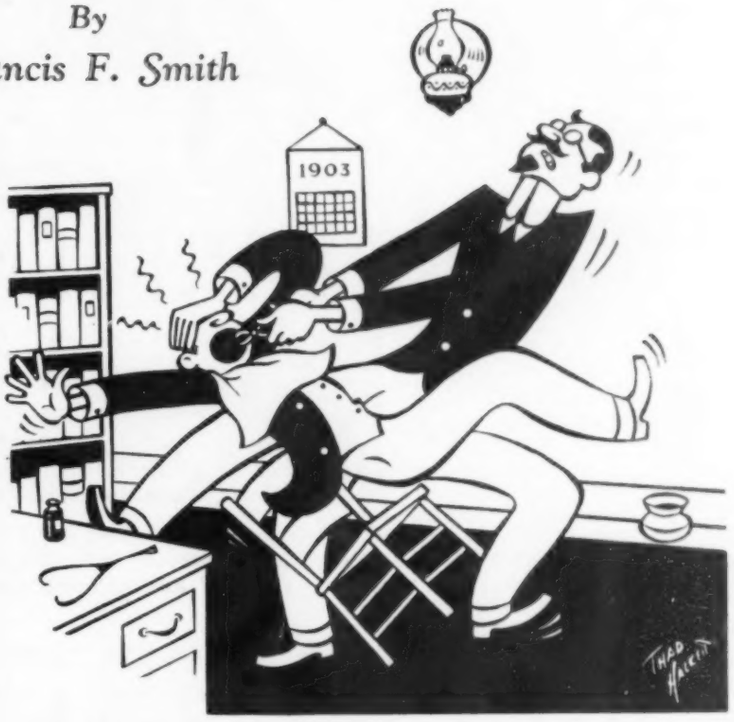
If diarrhea develops, feeding should be stopped or greatly diminished and an abundance of water should be given. Cathartics should not be given except on the advice of the physician. If the diarrhea does not improve within a short time, a physician should be called and a complete examination should be made.

"Open Wider, *Please*"

By
Francis F. Smith

"WILL IT HURT much, doctor?" How many times have you asked that question as you seated yourself apprehensively in the dental chair? Based on past experience, that question was quite justified. Today it can no longer be said to hold true.

A short time ago a man came into my office and announced that he desired to have a tooth "drawn." Now to the layman this does not mean anything in particular except an instinctive dread at the unpleasant prospect of losing a tooth. But to any observant dentist it would indicate a number of things. First, the man's way of expressing his purpose indicated that here was an old-fashioned patient. This was borne out by his age, apparently 55 or thereabouts. Second, his demeanor indicated that he considered this a necessary but painful job to be completed.



"It's sure different from the old days. . . . He just took hold of her, and out she came."

He seated himself in the chair, and I at once made preparations for the extraction. The anesthetic and hypodermic syringe were made ready, the patient manifesting keen interest in the procedure. As I picked up the syringe and prepared to make the injection, he raised his hand. "Wait a minute, Doc, you don't have to use that stuff on me. I can stand the pain all right."

"But," I protested, "that isn't necessary. You don't have to stand any pain."

After some coaxing he consented to allow me to proceed. As quickly as possible the injection was completed and the offending tooth was removed painlessly. "Gosh, Doc, that was certainly easy. It's sure different from the old days. Why, the last tooth I had pulled was nearly thirty years ago. The medical doctor did it for me because we didn't have a dentist in our town—and how it hurt! He didn't give me anything for it. Just took a hold of her, and out she came. They sure know how to do things better nowadays."

Yes, they do know how to do things better nowadays. Dentistry has come a long, long way since the day of the itinerant tooth puller. Yet the first dental school in the world was established less than one hundred years ago. The Baltimore College of Dental Surgery, now a department of the University of Maryland, was founded in 1840. Its first class graduated after two terms of six months each. Now more than twenty grade "A" colleges throughout the country are turning out classes of highly trained Doctors of Dental Surgery after an intensive and exacting course of six years or more.

Indeed, dentistry has grown mightily. Like its brother, medicine, which has increased the average length of human life, dentistry seeks to lengthen the span of life of the human dentition. Perhaps the day is near when dentistry shall be mostly concerned with prevention, thereby eliminating the necessity for repair. But today the tremendous amount of reparative and restorative work being done makes it necessary that that work shall be done as painlessly as possible. Don't laugh! There is such a thing as painless dentistry. Any modern progressive dentist can demonstrate it to you. There no longer needs to be any dread of that periodic visit to the dentist. The development of local anesthesia has progressed to such an extent that even surgeons are using it for major operations.

Patients frequently ask me before an operation whether I am going to "freeze the gum with cocaine." What they really mean is whether I am going to use an anesthetic to deaden the pain which might otherwise develop. Cocaine is almost entirely out of use in dentistry. It is an excellent anesthetic but highly

toxic. Its use was attended with a great many difficulties, not the least of which were legal ones. It is a narcotic, of course, and requires the payment of a revenue tax under the provisions of the Harrison Law. The most commonly used local anesthetic is procaine or, as it is usually called, novocain. Procaine is a product of that most amazing of modern sciences, synthetic chemistry. It is nontoxic, does not come under the provision of the Harrison Narcotic Act and may be purchased anywhere.

"In my $200 operation, I use my best grade of silkworm sutures with hemstitched borders and embroidered scallops."

The patient's use of the expression "freezing the gums" has a literal foundation in fact. There is a product known as ethyl chloride, which actually freezes the tissue on which it is sprayed. It is useful for producing mild surface anesthesia for the lancing of boils and abscesses, but it does not have sufficient penetrating strength for the extraction of a tooth.

Patients frequently ask me, "What tooth paste do you recommend?" I do not recommend any brand in particular. Nearly all are satisfactory. No tooth paste can be expected to do more than clean the teeth. If a tooth paste is supposed to cure pyorrhea or prevent decay, that tooth paste is not safe to use. Pyorrhea can be treated only by a dentist, and there is no positive method known today for the prevention of decay.

This brings the discussion to the complaint that the dentist hears most often. "Doctor, I brush my teeth regularly, but every time I come to see you, I have another cavity or two. It just seems a waste of time to give my teeth so much care and still to have them decay." True, it is discouraging, but take comfort from the fact that you would probably have a great many more than one or two cavities if you did not give your teeth the care that you do. The exact cause of dental caries or tooth decay is not really known. There are theories that seem to be borne out by experiment. Until a few years ago the theory of acid fermentation seemed to be sound. It held that bacteria found a breeding place in clinging food particles on the teeth and produced an acid which attacked the tooth structure, dissolving out the calcium. It now seems that this theory will have to be changed or modified. Experiment and research seem to indicate that tooth decay is caused by a faulty diet. Indeed, investigators claim that after having produced decay in the teeth of rats and guinea-pigs, they have caused the cavities to disappear, simply by changing the diet. This is why every one has been hearing and reading so much about the vitamins in cod liver oil, orange juice, milk and even in sunshine. It seems that the vitamin, which for want of a better name has simply been called vitamin D, is present in these foods and also in the rays of sunlight. Vitamin D is necessary to the growth and development of bones and teeth. If it is taken away, rickets and soft teeth develop. If it is restored, the rickets disappears and the teeth harden. Does it sound fantastic? Not at all. It has been proved hundreds of times. Probably it will be necessary to accept a combination of both theories to arrive at a satisfactory conclusion; that is, the teeth become nonresistant to acid fermentation when they are deprived of their normal calcium content in the diet.

The practice of dentistry, like the practice of medicine, reveals a great many queer sides of human nature and likewise a great many surprisingly pleasing ones. Practically without exception, every one is concerned about his personal appearance and knows how important a factor the teeth are in the appearance. Indeed, some people seem to regard their teeth purely as articles of adornment. A patient will say to me, "Just fix up the front ones, Doctor. The back ones don't show anyway." If I try to explain the vital necessity of keeping the molars in good repair, the patient usually, and sometimes truthfully, pleads lack of finances for a complete job.

I do not know how many youthful mouths have been irreparably damaged by an extraction of a crooked tooth, insisted on by a parent who failed to understand the benefit to be derived from orthodontic treatments.

Times without number, dentists are requested by patients to place a gold crown on a perfectly good front tooth. "It looks rather pretty," they remark equably. I was once asked by a woman patient to set a diamond in one of her front

teeth. I told the lady as gently as possible that she had apparently come to the wrong place, and I tried to convey the idea that my place was a dental office, not a jewelry store.

This vanity, of which almost every one is a more or less willing victim, has been capitalized along with the exploitation of painless dentistry by numerous quacks, until the words "Painless Dentistry" have become almost a joke. Indeed, one enterprising dentist on the Pacific Coast has had his baptismal name legally changed by court decree to Painless.

The advertising material put out by these gentry by way of the newspapers and radio has tended to produce the idea in the mind of prospective patients that dentistry is a commodity and may be purchased like a pair of shoes or a sack of salt. They usually advertise various kinds of "plates" at various prices as though the quality of material determined the price of the "plate." Indeed, I have heard of patients who, having been shown samples of the dentist's plates, said, "Very well, I'll take that one," and then picking up the indicated plate actually attempted to put it in the mouth.

Dentistry is and always will be, as long as human beings are what they are, a personal and extremely intimate service. Your dentist bases his fee, not on the quantity and quality of the material he has placed in your mouth but on the value of his services. You might as well expect a surgeon to tell you that he has three qualities of operation for your appendix or gallstones: "In my $100 operation I use this quality of horsehair with plain sewing. In my $150 operation I use this quality of catgut suture with fancy sewing. And in my $200 operation I use my best grade of silkworm sutures with hemstitched borders and embroidered scallops. A most handsome job and one that you will be proud to show your friends." By the same token a physician might be expected to undertake to cure lumbago on a basis of "no cure, no pay, fifteen year guarantee on all work." Ridiculous? Of course, yet a girl was sent to see me by her father who requested that I examine her mouth and quote him a price on some "second grade" work. There is only one grade of work permissible in the body, whether it is in the abdomen or in the mouth, and that is the best that the operator can do. The conscientious dentist will perform that kind of work in the mouth regardless of the fee he charges and the time required to complete the task.

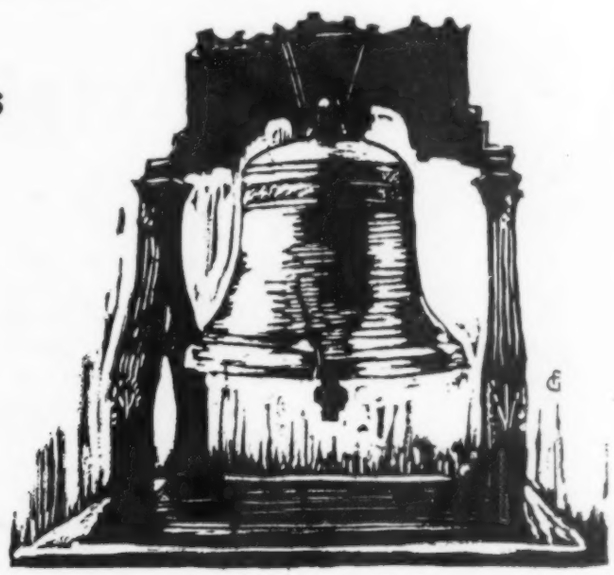
Hygeia's Frequent Declarations of Independence Help to Make Every Day Safe and Sane

The July Issue Will Present:

Dr. Thurman B. Rice's new series on sex education. "Sex is everywhere about us," writes Dr. Rice. "We see it in the clothes we wear, the occupations we serve, in the sports and games by which we seek relaxation. . . . Unfortunately it has been much misunderstood. . . . Sexuality has been confused with sensuality." The first article in the series deals with the ideals and purposes of sex. Succeeding articles will discuss the anatomy and physiology of the reproductive system, teaching of sex to the young child, the period of adolescence, the mating period, the young married couple, sex in middle and advanced life, and other pertinent topics.

A story by *Paul H. Stevens*. "The dictionary defines statistics as a set of facts. Here they are, gentlemen, live statistics, live facts." With this presentation, Abel Brown, health officer, startles the aldermanic council out of its customary phlegmatic indifference and into much-needed action.

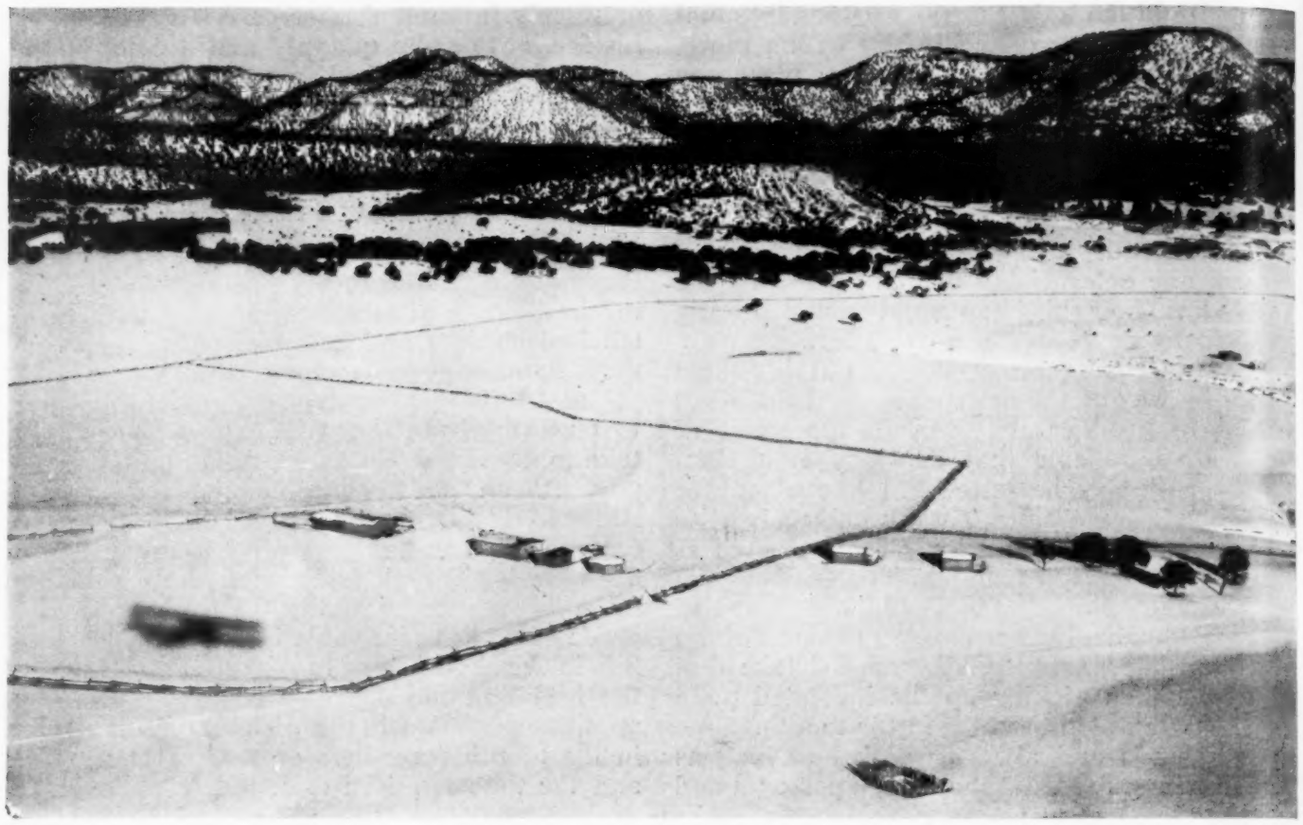
The answer to that popular summer question, "How long may I stay in the water?" In "Safe Swims for Campers," *Phyllis Jackson* describes the experiments carried on by the Girl Scouts organization to determine the proper length of time to be spent in the water by camp swimmers.



A timely message for vacationists. "The city dweller," writes *Curtis Billings*, "is far more liable to suffer an accident in the country than in the city. . . . He has developed automatic responses which protect him on busy urban streets, but he is a veritable babe in the woods." Safety in the summer cottage, camp sanitation and other means of safeguarding the health and happiness of this babe in the woods form the basis of Mr. Billing's enlightening article.

A warning by *Donald Laird* to overambitious parents, who in their mistaken zeal frequently ruin the lives of their children or at least hamper their normal, happy development. The alarming results of this attitude are described in "Disastrous Ambition."

An article on appendicitis by *Dr. Hugh Robertson*, who lifts the shroud of mystery from the term, explains clearly and simply "The Why of Appendicitis," and tells what goes wrong with an appendix.



Shadowy wings, beating up from the south, brought food to the starving Navajos.

Wings of Mercy

By H. Latané Lewis II

STORMBOUND and starving, 20,000 Indians had abandoned hope for life in the Black Mountains and the Navajo Mountains last January. King Winter in an ugly mood had left them destitute and marooned from outside aid, following a storm of unprecedented severity. Stoically, they awaited death.

Then, when all hope had been abandoned, a distant hum attracted their attention. As they gazed into the sky, specks appeared against the blue, taking on birdlike shapes as they wheeled earthward. The red men watched in amazement as the great "roaring eagles" swept low over their *hogans*, or mud dwellings, and dropped large sacks, which they found contained beans, flour, sugar, salt pork and dried fruit.

These *chiti-no-tah*, or automobiles that fly, as the Indians called them, were bombing planes of the Eleventh Bombardment Squadron, U. S. Army Air Corps, stationed at March Field. They had been sent out on the relief expedition at the request of the Indian Service, since that department had found it impossible to reach the starving tribes. With life-saving bundles of food attached to the bomb racks in place of missiles of destruction, six huge bombers covered an area of 20,000 square miles in their search for the stricken Navajos. During the six days of the operations, 40,000 pounds of bulk food were dropped.

Thus did the Army Air Corps once more dramatically demonstrate its never-failing readiness to render prompt aid to those in distress. Although in time of war the mission of the Air Corps is to destroy human life, in time of peace it has proved to be a valuable means of saving it. In emergencies, when a life hangs in the balance and minutes mean the difference between recovery and death, the military airplane has brought medical aid which by any other means would have arrived too late.

In isolated sections of the country and in major disasters, the Air Corps is frequently called on, and it has never failed to respond, to the limit of its resources. Army pilots have displayed extraordinary heroism in performing these errands of mercy, often with great risk to their own lives. In Panama, in the Philippines, in Hawaii and in some of the sparsely populated sections of the West where doctors and hospitals are sometimes hundreds of miles

from the scene of injury, constant use has been made of Air Corps equipment.

To mention a specific type of mission in which the Air Corps has been eminently successful, many persons have been saved from the effects of poisonous snake bites in these areas. Snakes have always presented a deadly menace to the inhabitants. Heretofore, when bitten by a venomous reptile, the victim has almost always faced certain death. With the Air Corps on the job, however, many cures have been effected. Snake bite antiserum has been carried over wild and treacherous country in a fraction of the time that would have been required for surface travel.

Recently in Colorado the military ship was called on in an extreme emergency. A family of six, including four children, was stricken with botulism, a type of food poisoning. Paralysis was rapidly setting in. The nearest antiserum was in Denver, 200 miles away over the Rocky Mountains. By automobile serum would arrive much too late. The attending physician telephoned authorities in Denver and made a frantic plea.

At first an effort was made to charter a commercial plane, but none was available. A call was then hastily made to the governor for the use of a National Guard ship. He gladly gave his consent, and soon the serum was located and stored in the cockpit. Less than one hour after the doctor had telephoned, the Guard plane roared out over the mountains in the face of thickening weather.

Although storm clouds were gathering in the sky and it was necessary to buck a head wind, the captain did not turn back for a moment. Three hours after the call for help, he put his ship down near the scene of disaster in time to save the stricken family.

In April, 1928, when Floyd Bennett lay in a Quebec hospital, dying of pneumonia contracted in an effort to rescue the Bremen flyers, Colonel Lindbergh, a member of the Air Corps Reserve, obtained an army ship at New York. Loading serum aboard, he took off and flew through a blinding snowstorm to Quebec in an effort to save Bennett's life.

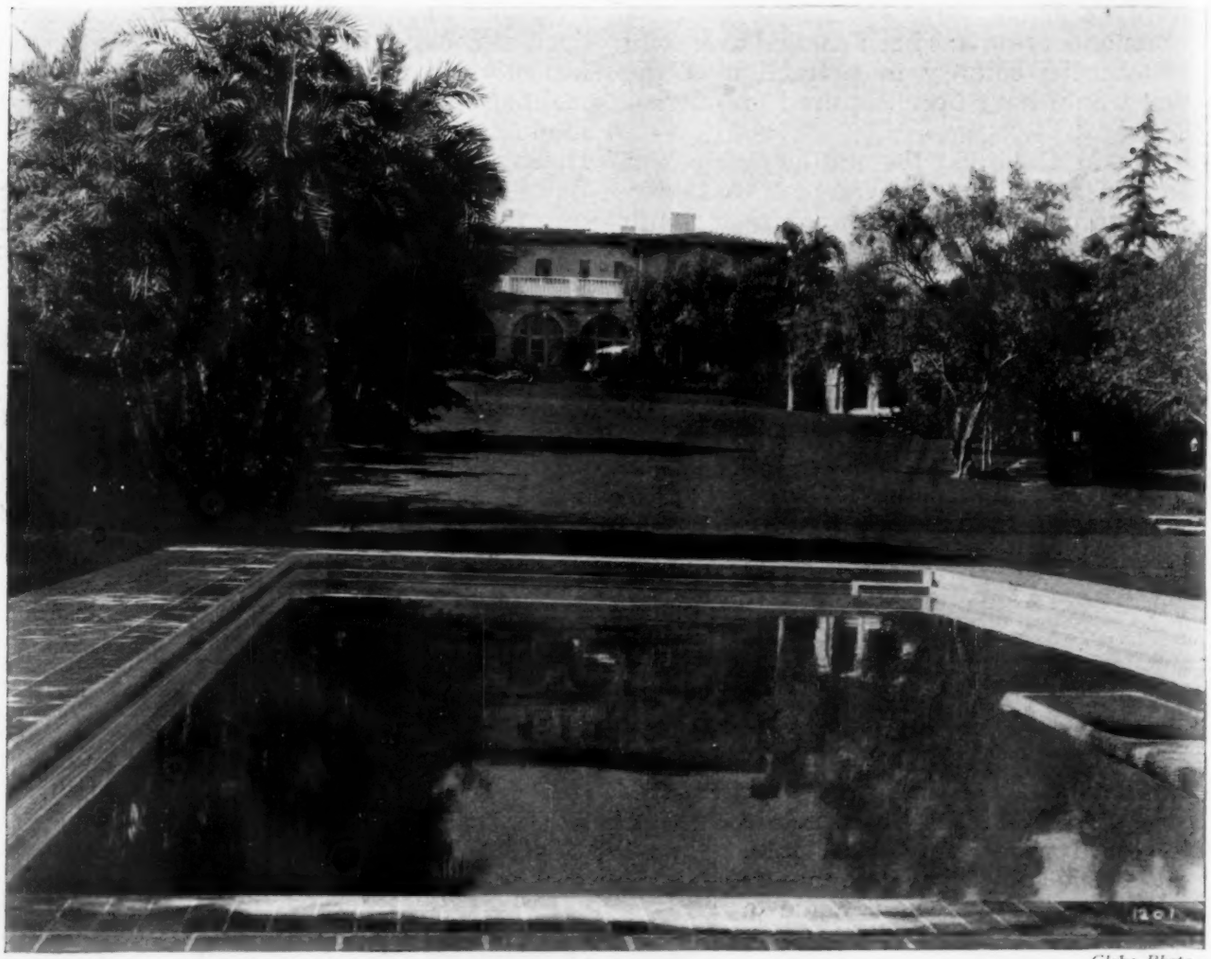
A recent incident which might have been amusing had it not ended tragically was that of a man who was rushed several hundred miles for an emergency operation after he had swallowed his false teeth.

Special ambulance planes have been developed for cases in which the patient must be transported. These planes are a direct development of the Cox-Klemin "Mercy Ship" which made its appearance at Kelly Field in 1926. During the first six months of that year, twenty-three patients were carried; in addition, numerous flights were made to transport medical officers to patients. Last year the Air Corps transported 100 stretcher patients by airplane.

Equipped with medical supplies and manned by heroes, an ambulance plane of the Army Air Corps embarks on a mission of mercy.

In the archives of the Air Corps there are records of many thrilling rescues by airplane. A great number of men in the army as well as many civilians owe their lives to the humanitarian work carried on by the U. S. Army Air Corps.

The Sanitation of the Private Swimming Pool



Globe Photo

The pool that is kept clean, attractive and sparkling is "a thing of beauty and a joy forever," both for the owner and for his guests.

By
R. H. BEAUMONT, JR.

A WEALTH of material has been written for the benefit and instruction of the commercial pool operator but little for the enlightenment of the hundreds of owners of private pools throughout the country, the majority of whom, lacking technical knowledge, give little or half-hearted attention and thought to the subject of proper sanitation of the pool. Many pools have been designed by competent architects who did a first class job and provided a suitable sanitation system. Yet many more designers neglected the sanitary angle and furnished nothing more than a concrete tank, intended apparently to do little except "hold water." There is no intention here of discrediting the architect or blaming his client. Actually, no one can be censored for the conditions existing in the second class of pools. The prospective owner was not expected to think in terms of residual chlorine and hydrogen-ion concentration, and the architect and contractor had not yet become "sanitation-conscious." So, for the edification of the many pool owners who as yet have thought it unnecessary to bother about pool hygiene, the following simple, nontechnical discussion about its importance is written.

Much of this material is "old stuff" to the progressive commercial operator, but it is hoped that the layman and particularly the private owner will derive from it a stronger grasp and greater appreciation of this most interesting problem.

Consider with me the average, typical pool on the suburban estate. Whether it is of the indoor or of the outdoor variety has little significance within the scope of this discussion. There is a pool containing from 25,000 to 75,000 or more gallons of water, which it is assumed is either unsterilized or inadequately and irregularly sterilized. It is supplied by the mains of the water company, or perhaps an adjacent stream is utilized. It will also be assumed for the purposes of this discussion that the water supply is "safe," even though an analysis might prove otherwise.

Germs Are No Respecters of Persons

To begin with a delicate point, many pool owners, especially the socially prominent, would consider their personal hygiene and that of their guests beyond any question of physical cleanliness. This is perhaps true. Unfortunately, however, the germs of transmissible disease are no respecters of persons.

The moment that a bather enters the pool it becomes at once a medium for the possible transmission of any of a number of diseases. As long ago as 1921, the American Public Health Association, with the aid of a number of physicians who were consulted by means of a questionnaire, decided that pink eye, meningitis, colds, sinus infections, tonsillitis, boils, ringworm, athlete's foot (ringworm of the foot) and a number of other common ailments "might be attributed to water, suits or towels at a bathing place."

In the light of this professional evidence it can no longer be assumed that the private pool is above suspicion; indeed, it must not even be given the benefit of the doubt.

A person may be a "carrier" although he may not show any symptoms of some of these maladies or even be aware that he carries the germs. Unsterilized water may contain and transmit pathogenic organisms; it must therefore be regarded as a menace to the health of every one using it. Since it is difficult to exclude either the unsuspecting carrier or the susceptible person from the pool, the obvious answer is complete sterilization of the pool water.

A discussion, then, on the subject of swimming pool sanitation must begin with and embody the premise that any person may be a carrier and that any water may contain harmful bacteria as well as certain other impurities present in all water, regardless of the source.

So far as it relates to sanitation of the swimming pool, the emphasis thus far has been placed on the control or elimination of Bacillus coli, this species being regarded as the index of all harmful bacteria. Various agencies have set up tentative allowable Bacillus coli counts in a given quantity of water. Pennsylvania, under its Public Bathing Law, allows a positive test for B. coli in not more than three out of ten consecutive samples, each containing 10 cc. of water. California has proposed a standard of 10 B. coli per cubic centimeter, while New York allows 30 B. coli per cubic centimeter. Certain investigators have recently offered the suggestion that tests for streptococci and micrococci might prove a better index of pool water safety than B. coli because some diseases under study, such as tonsillitis, "cold" and sinus infections, are frequently caused by cocci. But present information does not afford any evidence to prove that the regular routine tests should be abandoned in favor of other methods.

As to exactly what takes place in the destruction of bacteria by chlorination, there is as yet no accepted scientific explanation. There are two widely divergent theories.

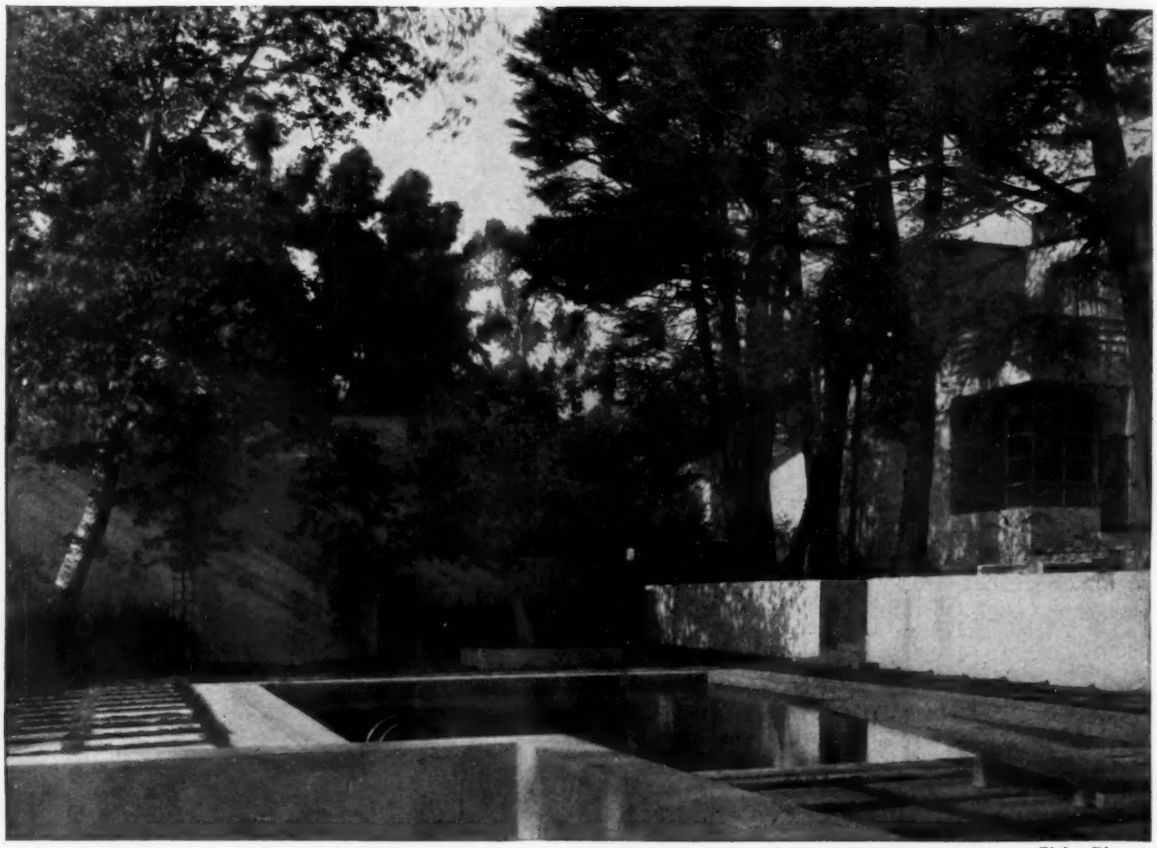
One theory is that the chlorine coming in contact with water forms mild hypochlorous acid and liberates nascent oxygen which acts to destroy the bacteria. The other and most generally accepted idea is that the free chlorine has a direct toxic effect in the destruction of the organisms.

Sterilization as it is popularly practiced today is accomplished by the application of chlorine or some form of product containing positively charged chlorine (Cl^+), such as the various hypochlorite products on the market.

How to Select a Chlorinator

Selection of a particular type or make of the "dispensing device," or chlorinator, is governed by consideration of the first cost of the machine, its maintenance or periodic repair charges, and the volume of the water to be treated. Whether the chlorinator dispenses a hypochlorite solution or gas makes absolutely no difference in the result in the pool. Both types of sterilizers are capable of producing and maintaining the required residual with exactly the same degree of disinfection against bacteria.

Chemicals other than chlorine or its compounds as well as other methods of sterilization have been used but not to any great extent in connection with the private pool. The popularity of chlorine or its compounds is due to the facts that it is the only chemical that may be readily applied in an efficient manner and convenient form and that so little of this powerful sterilizing agent is required that it need not be annoying or harmful to the skin, eyes, ears, nose or throat. There exists in the minds of a great many people the dangerous aspect of chlorine as a gas. They associate it with the poison gas used in the World War. It cannot be denied that the gas is actually and definitely hazardous



Globe Photo

The pool should be drained at intervals and thoroughly scrubbed.

if it escapes accidentally. Perfect control and care must be exercised in the handling of the equipment. The prospective purchaser of a chlorinator has a wide selection of other machines which use the perfectly safe compounds of chlorine such as those already mentioned.

Chlorination Must Be Continuous

In every swimming pool there exist in the water small particles of matter in suspension, some chemical impurities and foreign matter in general, as distinguished from chemically pure (distilled) water. When hypochlorite solution is first injected into the pool, the chlorine is attracted to and combines with the foreign matter. It is the nature of chlorine to have a strong chemical affinity for these ingredients present in the water. When the chlorine combines with them, it also dissipates itself; it is therefore necessary to feed sufficient quantities of hypochlorite solution to the water, so that after the combining action has taken place there is left what is termed a "residual," or in simpler language, an excess of the chlorine which remains in the water. It is this residual that keeps the water safe at all times. The residual does not remain permanently but must be constantly and continuously maintained by a proper rate of feed of solution. It does not remain for any length of time because of the agitation of the water by the bathers, the action of sunlight on the water, the natural dissipation of the chlorine content, and other factors. Thus it will be seen from these conditions that the process of chlorination, to be effective, must be continuous.

The degree of chlorine residual required in the pool is expressed in terms of parts per million, and the proper operating range has been determined in terms of from 0.2 to 0.5 p.p.m. (parts per million). This means that 0.5 p.p.m. is half of one part by weight of chlorine to a million parts of water, by weight. Thus it will be seen that even the maximum required residual indeed represents an infinitesimal proportion of chlorine to water; but it is, strangely enough, sufficiently powerful to sterilize and render absolutely harmless the most harmful bacteria.

The Proper Proportions Are Important

A residual that is less than 0.2 p.p.m. is insufficient for thorough sterilization, while a residual greater than 0.5 p.p.m. is not only more than is required but is irritating to the skin and eyes. A range of from 0.2 to 0.3 is preferable in that it produces a sufficient sterilization effect and at the same time renders the chlorinous taste and odors undetectable by the average person. While it has been shown that certain bacteria are not affected by residuals as high as 0.5, it is also true that chlorine resistant organisms cannot thrive in water in which the residual is

continuously maintained above 0.2. It is therefore advisable to dose the pool up to about 1 p.p.m. after a period of inactivity in which the residual has dropped below the normal minimum limit.

It is no longer considered efficient or even safe to rely on the hand method of distributing these chemicals directly to the pool water, trusting that such action will produce a completely sterilized water.

Disseminate the Chemical Completely

In order to understand the complete process of sterilization of water, it is necessary to inspect the reaction of the chlorine with the water and the foreign substances in it. The first consideration toward proper chlorination is that the chlorine or hypochlorite solution applied to the water must definitely and thoroughly penetrate to every portion of the pool, including its length, width and maximum depth, if it is to fulfil its purpose. In the case of hand application it is almost impossible to sterilize thoroughly all parts of the pool; because of this fact the hand method is practically futile in that one portion of the pool may be properly chlorinated and in another no trace of chlorine may be present.

A means must be employed for the proper and complete dissemination of the chemical to all parts of the pool at a controlled rate of feed. The rate is dependent on the quantity and quality of the water to be treated. In some cases it is necessary to utilize available water pressure with a forced feed distributing pipe at the bottom and on one side of the pool. In other cases it frequently happens that the particular nature of the inlet to the pool is such that the sterilizing solution can be fed at this point with the assurance that the sterilizing effect will reach all parts of the pool. The exact nature of the application varies and must be worked out in every case.

In addition to maintaining a chlorine residual at all times when the pool is in use, it is also desirable (and sometimes essential) to keep the water on the "alkaline side"; that is, a test should indicate a mild alkaline reaction and not an acid one, however slight. Unfortunately, every condition in connection with a swimming pool acts to make the water acid. Bathers themselves may turn an otherwise neutral or alkaline water into an acid one because of the natural acid exuded through the skin. Hence to preserve and maintain an alkaline water it is necessary to add a chemical alkaline in its nature. The most common form of this is soda ash and is available in a convenient brick form, which is thrown directly into the pool when a test indicates that the water requires it. Too much alkalinity and too much acidity are equally harmful and produce an irritation of the eyes, throat and mucous membranes. Fortunately there is a happy medium in the proper alkaline value of water, and this has been determined as the value expressed in terms of from p_H 7.2 to 7.6.

To illustrate briefly what is meant by the term p_H, one may compare the measurement of this value with the ordinary household thermometer. On the thermometer, 32 F. is of course the freezing point; for the sake of illustration, assume that the values above and below 32 F. represent degrees of heat and cold respectively. Hence any value higher than 32 F., such as 34 F. or 36 F., denotes an increase in heat. The degree of heat increases as the numbers increase. Similarly, values below 32 F., such as 30 F. or 28 F., denote an increase in coldness. The degree of cold increases as the numbers decrease. Instead of being termed degrees, as with the thermometer, the units on this scale are known as p_H values. On the p_H scale, a value of p_H 7 represents absolute neutrality, which means that it is neither acid nor alkaline. Any values higher than p_H 7, such as 7.2, 7.4 or 8, denote alkalinity, the degree of alkalinity increasing as the numbers increase. Any values lower than p_H 7, such as 6.8, 6.6 or 6, denote acidity, the degree of acidity increasing as the numbers decrease.

Measurement of p_H and chlorine values is a simple matter and can be easily and quickly done with the aid of inexpensive testing sets supplied for this purpose.

Water Filter Clarifies but Does Not Sterilize

It is sometimes desirable to use a water filter to maintain a clear, sparkling condition of the pool, and the use of good filtration equipment should be considered, whether or not the water is to be recirculated. A filter and recirculating pump will pay for itself in cases in which high water rates make the cost prohibitive; if the water supply is excessively turbid, as in some creek waters, a filter is recommended, even if it is of the less expensive and slower gravity type. The function of any filter is to clarify and not to sterilize the water, although it does catch and retain a certain amount of bacteria.

Other minor but no less important considerations outside the pool deserve attention. A suitable foot-bath should be placed near the entrance to the pool so that each bather steps into it before going into the water. A hypochlorite solution is convenient for this purpose and serves to prevent the spread of "athlete's foot." The shower-room, toilets, floors and benches should receive a regular, periodic washing with a suitable disinfectant. The pool itself should be drained at intervals, and the sides, bottom and concrete surroundings should be thoroughly scrubbed.

In a word, keep the pool clean, attractive, sparkling and inviting! Keep the water in it "fit to drink," and every swimmer will begin to find new joys in a healthy pastime.

First Aid for Children

By GAYLORD W. GRAVES

Real estate men should locate their own poison ivy instead of letting their prospects' children find it.

HOW TO MAKE the cradle safer for infancy, and the street and the playground safer for childhood would be a far less stupendous problem if, in the very nature of things, children were not always in trouble. If Bunyan, the author of "Pilgrim's Progress," had selected a more youthful hero, even that immortal allegory might make more exciting reading, because the hazards of youth are so many more than those which adults have to face. Early existence is difficult enough as conditions are met, without having to face a reversion to savagery under an institution of kidnaping.

The child, although in a safer state than the infant, naturally assumes new risks on entering an increasingly widening field of action. "What will that little rascal do next?" is the age-old question, ever repeating itself until "that little rascal" is grown up.

Thus it seems unreasonable to talk about first aid for children and probably far more sensible to talk about prevention, which is more important than belated help, for first aid would not be needed if there were adequate prevention.

The baby would not have choked on his toy if the toy had been larger than his mouth, would not have swallowed the penny if he had been playing with a balloon, and would not have blocked up his windpipe with a stomachful of his formula and died if he had been fed more slowly and had been laid on his right side instead of on his back after feeding. Little Junior would not have been burned if he had been playing near the icebox, would not have fallen downstairs if there had been a suitable closed gate at the head of the stairs, and would not have eaten the chocolate pills with the strychnine content if they had not been where the family candy box is ordinarily kept.

No less simple than this principle of prevention are many of the fundamental principles of first aid itself.

Castor oil is of no aid when an open safety pin has been swallowed; and the disappearing article should not be helped down the throat by a forefinger that pushes, if even unintentionally. Do not turn the patient upside down or slap him on the back if a pin or fish bone has been swallowed. Frequently such an offending object will be coughed up without additional procedures, such as the use of far-reaching illuminated instruments in conjunction with the x-rays.

Excessive handling and artificial respiration are not indicated for the unconscious child in a fainting attack. Transportation, even in the best

conveyance, is not good treatment for the bleeding within a fractured skull. How, indeed, may one know that the boy with the baseball "shiner" over one eye, who has been knocked out only for a minute, is not slowly leaking blood within his skull? Similarly, bad sprains and fractures are not helped by immediately rushing the patient somewhere.

Obviously, first aid ought never to involve secondary injury. Likewise first aid should not disregard simple physical laws. Because circulating blood is propelled more easily when the body is flat, circulation in the brain is better in the fainting patient when the head is low. Water more readily flows out of the air passages of the submerged or nearly drowned person when he is tipped over with the face down, in the well known position that Johnny assumes when he pitches over the stone wall after his lost ball. Of course, artificial respiration will not expand lungs filled with water. Severe bleeding will not stop if one merely watches it. How much better is the attitude of the good but impatient country doctor who in spite of the difficulties he was having with a case said, "Any fool ought to be able to stop a leak!" Moreover, delirium and convulsions, occurring concurrently with a temperature of 105 F., are not controlled by wrapping a child up and making him hotter, even if he complains of feeling cold.

Poisons may be combated with antidotes when they are available; but ordinarily when something harmful has been swallowed, the administration of enough warm water and baking soda to stretch the stomach, followed by tickling the victim's throat with a forefinger, even at the risk of being bitten in the act, will do more mechanically to relieve the situation than a delayed antidote could possibly accomplish chemically or physiologically for the patient.

Unfortunately, for effective application of the simple principles of caution and common sense, it is indeed impossible to foretell in the career of little Junior what a day or an hour may bring forth. In an environment conducive to automobile accidents, an ambulance surgeon finds the youngster with a wolf bite of the hand. The child has been feeding the animals in the park zoo, and the carnivorously inclined wolf prefers human fingers to peanuts. Out in the pure atmosphere of the open country where there are only two trains daily, the same child gets a cinder in his eye. On the cleanest beach accessible, he steps on a rusty nail. Up to the age of 5 years, moreover, the object of one's constant solicitude possesses the capability of going to bed all right and waking up with the croup, thus reminding those who attend him that not all first aid cases are surgical.

In short, if careful plans are made by the doctrine of probabilities in the interest of any individual child, some unexpected event is quite sure to transpire presenting emergency needs which cannot be adequately met.

Of course, the representative child is not at all likely to be bitten by a wolf, yet he may be bitten by a wolfhound. He may not be burned or scalded in the ordinary manner, yet he may be severely sunburned. He may not catch cold in his ear, but if he dives and swims he may get unclean water in the accessory passages tributary to his nose and eventually have a summer mastoid or sinus operation.

If a fellow is all he ought to be in the summertime, he surely will have abrasions of the knees and recurring crops of splinters in his fingers even if he is not sufficiently progressive to get a fish hook imbedded in his hand. Beyond a doubt, sometime during the summer the family hero will actually bleed for some reason or other, from some site or other. If he stays in the big city and goes to the suburbs on Sundays only, he still has a fine chance of encountering poison ivy. It seems strange that real estate men do not locate their own poison ivy more frequently, instead of letting the children of their prospects get into the stuff, thereby spoiling good chances for sales.

In the face of hazards so manifold and exacting, there must be understanding and appreciation of specific procedures to meet special conditions.

There is no more deadly disease than human rabies or hydrophobia; nevertheless, there is no disease of equal severity that is more

On the cleanest beach accessible, he steps on a rusty nail.

Unfortunately, the carnivorous wolf prefers human fingers to peanuts.

amenable to first aid measures and specific preventive treatment. While it is perfectly possible to vaccinate dogs against rabies and gradually to develop a canine population that is not a menace, up to the present time there is little protection of this type. Consequently, notwithstanding the fact that countless children are annually bitten by pet animals with no ultimate bad results, scores receive inadequate treatment for bites of dogs actually rabid but apparently only ailing. Every year the disease develops in some of these victims and they die in agony. If a dog has rabies and bites a human being on the hands or face, that victim's chances without prompt and thorough treatment are poor. Nobody recovers after the convulsive stage has actually developed.

Why then take chances? Every dog that bites must be isolated and watched until it has had time to show symptoms. Then, and not until then, the animal should be killed by some one who knows how, and the head should be sent to a laboratory for confirmation of the diagnosis. If the diagnosis is confirmed, the bitten person should promptly receive Pasteur treatment.

All dog bites call for immediate cauterization with fuming nitric acid, not carbolic acid, iodine or any other reagent. The nitric acid may be applied carefully and thoroughly to the wound with a tightly wound cotton-tipped toothpick or instilled drop by drop along the course of the wound from a medicine dropper. While destructive action of the acid may be stopped by following its application with that of strong ammonia, dog bite is always an indication for thorough treatment.

Nail wounds, particularly those from nails encountered in manure-laden garden soil, and Fourth of July wounds call for immediate cleansing, for enlargement of the wound to permit removal of foreign matter and for the prompt use of tetanus antitoxin. The minute but deep puncture is more dangerous than the extensive cut or abrasion that bleeds freely without retention of bacteria.

The cinder in the eye is so common that every one ought to be able to turn up an eyelid. The rules are simple: Stand behind the child, ask him to look down, grasp the eyelashes of the upper lid between the thumb and forefinger and, with the other hand holding a match horizontally across the skin surface of the lid, turn the lid backward over the match. Wipe the cinder off, if possible, with a corner of a folded clean handkerchief. If this fails, wring out the handkerchief in cool water or, preferably, in boric acid solution, and keep the wet handkerchief over the eye until a doctor arrives with local anesthetic and suitable instruments.

The splinters and the fish hooks may cause trouble if they are wrongly managed. For instance, a fish hook imbedded deeply cannot readily be pulled out until it is shoved gently ahead so that the barb protrudes through a special exit point in a position to be cut off with file or pliers. If the hook is withdrawn from a deep wound without such procedure, the tissues will be unnecessarily torn. Excess of strong iodine used on such wounds should always be wiped off the adjacent skin, in order to prevent an iodine burn.

A most fruitful source of bleeding in childhood is, of course, the nose. Noses, one may say, with due apology to Simple Simon, would bleed far less if they were not permitted to bleed so much. A cold wet compress, applied in such

a manner as to constrict the bleeding nostril and at the same time to make pressure indirectly against the middle partition of the nose, will usually control such bleeding. Cold applications on the back of the neck in some instances seem to help. Pressing the tongue firmly upward between the upper teeth and upper lip constricts the arterial supply of the nose. Blowing the nose does not help. Recurring nosebleeds would, in many instances, cease if they were not considered of constitutional origin and if a physician were given the chance to identify the usual bleeding point in order to apply directly the proper local application.

Burns, whether caused by sun, flame, hot liquids, hot metals, steam or chemicals, are ordinarily more serious than they seem. In severe cases as soon as the fire has been extinguished by wrapping the child in a blanket or floor rug, the victim, clothes and all, may be put in a lukewarm bath and the clothes may be removed without interruption of the bath. A saturated solution, containing as much baking soda as the water will dissolve, is the simplest first aid application for ordinary burns of small extent.

Like the burned child the one exposed to poison ivy presents a nice problem in clothing removal. The external surface of clothing that has been in contact with the ivy should not be allowed to touch the skin. Exposed skin surface should be repeatedly washed with strong laundry soap and warm water without scrubbing; then, if convenient, it should be washed also with gasoline, with due attention to the fire hazard. Finally a dressing of soap paste made by boiling the soap in water to the consistence of lard may be applied cool and allowed to dry and remain on any inflamed areas overnight. This is practically the same method as that of the American Red Cross.

A patient especially needs a doctor when he has an earache. If a warm solution containing a teaspoonful of salt or boric acid to the pint of water, instilled into the ear, gives no relief, the sufferer needs a sedative; at this point the medicine kit should give up its paregoric, subject to the physician's directions, pending his early arrival.

Croup, although terrifying in the dead of night, is seldom deadly if the patient has had his diphtheria toxoid and his subsequent negative Schick test excluding the possibility of diphtheria. While father is filling the bathtub with warm water, mother is retrieving the ipecac, and big sister or the maid is boiling water to provide steam inhalations, the croup victim should be propped up on two pillows and given anything in the house from the flashlight to the alarm clock to distract his mind from the serious noises he is involuntarily making in his throat. The dose of ipecac should be enough in a bad case to induce vomiting. One teaspoonful every ten minutes for three doses is permissible if a single dose is ineffectual. With vomiting comes relaxation, sweating, drowsiness and cessation of the barking noises in the throat. Any old teapot may be used to generate steam vapor. An electric vaporizer is most convenient. With an umbrella over his head to confine the steam for inhalation, the child with croup will usually go to sleep. Nevertheless, the ipecac should be kept on hand in case a few more barks and wheezes interrupt the peace of the following night.

Everybody is interested in the child with a broken bone or an operative case of acute appendicitis. There is universal respect for the unusual and spectacular condition. Too few of us are concerned with a sprain which may be a fracture and with a stomachache which does not subside and may far precede in point of time the diagnosis of appendicitis.

First aid, even in its simplest form, may forestall serious illness and the necessity for major surgery.

STRANGE WHAT CARE SOME FOLKS TAKE WITH YOUNG GROWING THINGS——
I THINK IT'S TOO CONFINED.
BE CAREFUL! DON'T TOUCH IT!!
GIVE IT MORE LIGHT AND AIR.
CAREFUL!
——BUT WITH OTHER "YOUNG GROWING THINGS" IT'S DIFFERENT!
TOSS HIM AROUND! HE LIKES IT.
IT'S MY TURN TO KISS HIM NOW!
LET ME HOLD THE LITTLE RASCAL!
LOOK AT HIM CHEW MY FINGER, AGNES.
FEEL HOW SOFT HIS HEAD IS!!
GRAHAM HUNTER

Two American Presidents Who Had Cancer

By JAMES A. TOBEY

UNLIKE MANY DISEASES which are most serious among underprivileged persons, cancer is a malady that plays no favorites. It may attack the high as well as the low, the rich as well as the poor, and the celebrated as well as the obscure. It has, in fact, caused the deaths of emperors and kings, scientists and artists, and many other important personages.

Among the famous persons who have been afflicted with malignant diseases have been two Presidents of the United States. One of them succumbed to cancer after finishing his term of office; the other was operated on for cancer while in the Presidency, but he survived. Delay in diagnosis may have contributed to the misfortune of the one, whereas prompt action in the discovery and treatment of the condition undoubtedly saved the life of the other at a time when his country greatly needed his services.

IN 1884, seven years after he had left the Presidency, Ulysses S. Grant began to have severe pains in his throat. In September a prominent physician examined the former President at his summer home at Long Branch and advised that he consult a specialist at once. If ex-President Grant had followed this advice immediately, he might have been spared much future suffering.

A month or more elapsed before the ex-President went to a throat specialist, who diagnosed the condition as probably cancerous. Another delay occurred, however, and it was not until the following January that a specimen taken from the tissues of the diseased throat was sent to a competent pathologist for a laboratory examination. The pathologist performed what is known as a biopsy; that is, he prepared a slice of the tissue so that he could examine it under the microscope. Without knowing the identity of the patient, he pronounced it cancer.

Ulysses S. Grant

About this time, Grant had begun work on his "Personal Memoirs," in accordance with an arrangement with the editor of the *Century Magazine*. For a time he set aside this task, as his condition grew steadily worse; but he soon renewed it with increased vigor and wrote steadily almost to the day of his death. After his sixty-second birthday, April 27, 1885, the General nearly died, but heroic measures by his physicians kept him alive, and his health improved somewhat thereafter, although only temporarily.

General Grant proved himself a good soldier during his long siege of illness. "He submitted to every operation," his associate, Gen. Adam Badeau, wrote several months later in the *Century Magazine*. "He carefully attended to every injunction, and sustained the long siege of disease with the same determination and tenacity he had displayed in other sieges and campaigns with other enemies. But now he was on the defensive—it was the first time."

On June 16, 1885, the ex-President was taken to a cottage at Mt. McGregor, a pleasant community near Saratoga, N. Y. In the clear air of this resort he continued to write, although he was suffering constant pain. The malignant condition had progressed too far to permit a cure, although skilful medi-

cal and surgical attention was given by a number of eminent specialists.

The fortitude displayed by General Grant in this affliction, which he realized was hopeless, should inspire all who suffer from cancer. "There was no excitement," General Badeau wrote, "no hysterical grief or fear, but a steady effort of vital power, an impossibility for his spirit to be subdued. He was not resigned, neither was he hopeful. He simply, because he could not help himself, made every effort to conquer."

The battle proved a losing one, and the eighteenth President of the United States died quietly, July 23, 1885. His remains were placed later in the magnificent tomb on Riverside Drive overlooking the Hudson River in New York City. His completed "Personal Memoirs" were published shortly after his death.

Grover Cleveland

EIGHT YEARS after the death of General Grant and about three months after his second inauguration as President, Grover Cleveland noticed an ulcerated patch in his mouth. He sent at once for an army surgeon, Dr. R. M. O'Reilly, who afterward became Surgeon General of the army. He made a careful examination and immediately suspected a malignant condition.

There was no delay in this case. A specimen of the diseased tissue was sent at once to an army pathologist. After a suitable examination, without knowing who was the patient, this pathologist submitted a report that the condition was cancer. Dr. O'Reilly called in consultants, who advised an immediate operation for the complete removal of the malignant tumor.

The President consented to this operation but only on condition that it would be kept a secret in order that the public might not be alarmed. During this period the country was suffering a financial depression, not unlike that of the present time, and Congress had been called into special session to repeal a free-silver law. Vice-President Stevenson was a free-silver proponent, and it would have been particularly unfortunate if anything had happened to Cleveland then.

The operation was performed in a dramatic way, and the details of it were not revealed until twenty-five years later when Dr. W. W. Keen, one of those present, described it in a magazine article. On June 30, 1893, the President boarded a private yacht in New York harbor, and the boat then steamed up the East River into Long Island Sound. The President was accompanied by Drs. O'Reilly and Keen, Dr. Joseph Bryant, his personal physician, and Dr. Bryant's assistant, Dr. John F. Erdmann, and also by Dr. E. G. Janeway and Dr. Ferdinand Hasbrouck, a dentist.

After Dr. Hasbrouck had extracted two teeth, Dr. O'Reilly administered the anesthetic, and Dr. Bryant, aided by Drs. Keen and Erdmann, excised the diseased tissue. The operation was done entirely within the mouth, with the help of a cheek extractor which Dr. Keen had brought back from a trip to Paris in 1866. This method prevented any external scars.

When the yacht arrived at Buzzard's Bay on July 5, President Cleveland walked ashore unassisted. About two weeks later, a second operation was performed by Dr. Bryant in order to remove some additional tissue, and shortly afterward a prominent New York dentist, Dr. K. C. Gibson, fitted the President with an artificial jaw made of vulcanized rubber. No impairment of speech resulted, and no one except the participants knew that these operations had been conducted.

By his promptness, President Cleveland unquestionably saved his life, for he lived for another fifteen years. After leaving the Presidency he retired to Princeton, N. J., where he died in 1908 at the age of 71.

THESE two episodes from American history offer an important lesson. Science has not yet discovered the cause of cancer, but all students of the cancer problem are agreed that the major forms of the disease can be cured if the danger signals are heeded and if the disease is promptly diagnosed and treated at once by competent methods. In most instances a surgical operation is necessary, but in some cases irradi-

ation with radium or the x-rays proves efficacious. This is a matter for the doctor to decide.

The danger signals of cancer may be summarized as follows: (1) any lump, especially one that begins to grow or change, in the breast or other part of the body; (2) any sore that does not heal, particularly on the face or in the mouth; (3) any unusual or persistent bleeding from any part of the body.

When symptoms such as these occur, it is the part of wisdom to consult a capable practitioner of regular medicine at once, without fear or undue excitement. The condition may not be dangerous, but it pays to find out about it. Delay always means trouble if cancerous or precancerous conditions are present.

President Cleveland's life was saved because he was sensible about his affliction. President Grant's life might have been saved if he had been more prompt in his action. Thousands of other lives could be saved by the practical application of the vitally important slogan, "Fight Cancer Early."

BRIEF HEALTHGRAMS ✣ from Articles in This Issue

¶A transparent man, a life-sized model of a human being in which each of the organs may be illuminated so that their position in the body and their relationship to other organs and tissues is apparent, is being brought from the great Hygienic Museum at Dresden to be displayed in the scientific exhibits in the Century of Progress exposition. *See page 489*

¶In twenty-seven years' enforcement of the federal Food and Drugs Act, the government has initiated legal proceedings in nearly 20,000 cases. *See page 545*

¶Contaminated cow's milk is the chief cause of summer diarrhea of infants. *See page 503*

¶Fully 80 per cent of the patients treated by country doctors during the vacation period have simple cases of gastric upset caused by food excesses and food foolishness. *See page 498*

¶A discussion on the subject of swimming pool sanitation must begin with and embody the premise that any person may be a carrier and that any water may contain harmful bacteria as well as certain other impurities present in all water, regardless of the source. *See page 512*

¶On the road to health there are many byways to tempt one, such as tobacco, alcohol and drugs. But the destination of health is never reached by those who are continually exploring byways. *See page 536*

¶The report of a medical board in 1904 showed that typhoid developed in about one fifth of the soldiers in the camps and that it caused 86.24 per cent of all deaths in the U. S. Army. But that was in 1904! *See page 541*

¶Sauces, dressings, left-overs, everything that is liquid or moist, should be kept covered in the automatic refrigerator for the best use of the machine. *See page 549*

¶"Got t' judge the owner as well as the hoss, and if there's anything the matter with his conscience it'll come out in the hoss somewhere." The same thing is true of parents and children, for disturbances in the emotional lives of the parents usually manifest themselves in the personalities of the children. *See page 495*

¶If Bunyan, the author of "Pilgrim's Progress," had selected a more youthful hero, even that immortal allegory might make more exciting reading, because the hazards of youth are so numerous. *See page 516*

¶A frantic plea for antiserum for a family stricken with botulism was heeded by a National Guard airplane which carried the serum over the mountains 200 miles from Denver, arrived three hours after the call for help and saved the stricken family. *See page 510*

¶There has been too much stress on exercise in relation to reducing and too little on its fundamental value in health building. *See page 523*

¶The erect child with the head up, the chin and shoulders back, the spine straight, the abdomen in, the legs straight and the toes forward and with good muscle tone and healthy skin is a joy to behold. *See page 533*

¶The modern hospital is a human repair shop, not a mere lodging for the ill. *See page 492*

¶Times without number, dentists are requested by patients to place a gold crown on a perfectly good front tooth. I was once asked by a woman patient to set a diamond in one of her front teeth! *See page 507*

¶An operation for cancer was performed on President Cleveland during his administration; it was not made known to the public until twenty-five years later. *See page 520*

The Radio Gymnasium Class

By

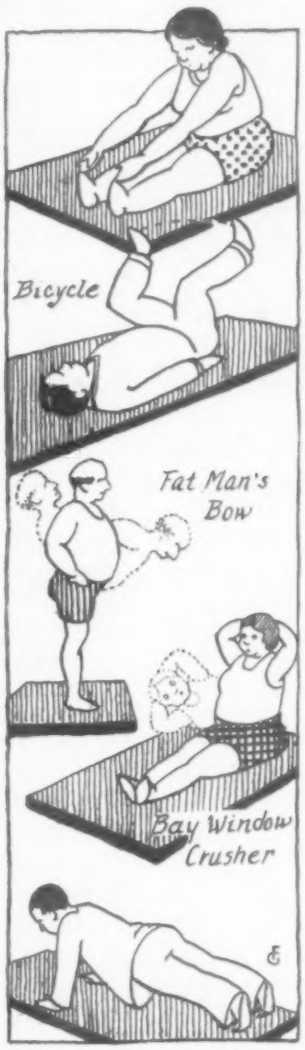
Alfred C. Boand

THE RADIO gymnasium class first saw the light of day in Chicago in 1923. Those who dislike it say that this precocious infant is the latest product of the health faddist. Its harshest critics say that it is born of a mesalliance between science and commerce and that the prattle of this mongrel child is a mixture of Swedish gymnastics and up-to-date advertising copy. Attention is divided between the health value of the exercises offered and the merchandise sponsored, with the advantage usually in favor of the merchandise, whether it is soft drinks, clothing or tobacco.

At first the exercises were offered as a service program at the expense of the radio station. Since the "fan letter" response was sufficient to justify commercialization, the health exercise period became a regular feature sponsored by radio advertisers. Its growth was rapid, and it has already begotten offspring in such numbers as to have representatives in many of the larger cities of the United States. Such is the precocity of this bastard child of Ling that in the eastern part of the United States a chain of eight stations carries the gospel to the waiting ears of the health enthusiasts over an area of some twenty states or more.

This whole matter might, of course, be dismissed with the assumption that no one pays any attention to such freaks of the air except those who are foolish enough to rise at an early hour to jump from chair to chair in a chilly room, under the delusion that they are improving their health. Is there any reason why any sane person should be interested in antics of any kind either before breakfast, after breakfast or at any time during a busy day? Why all this bother, if radio calisthenics are just the brain child of the faddist? Before dismissing the matter, however, let us look at the fan letters and see who are these high-powered enthusiasts. Who takes these exercises anyway?

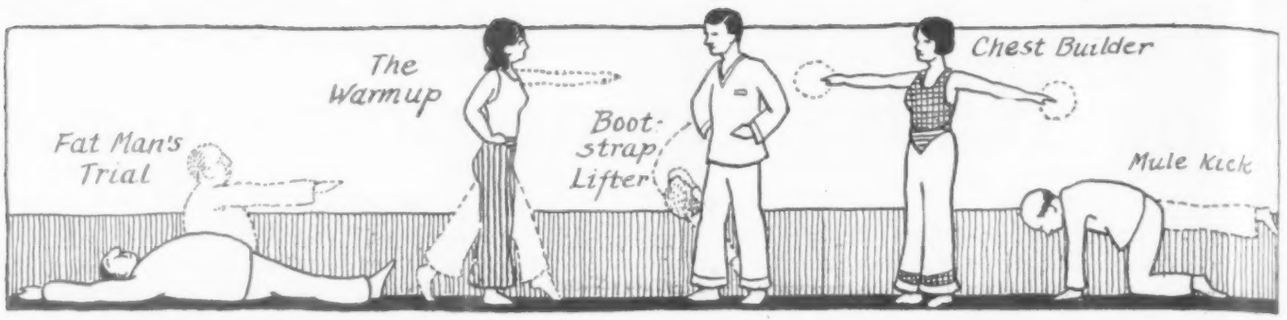
The fan letters, and there are thousands of them, indicate three main classifications: (1) the so-called white collar class, including all types of office workers in business and industry, sales persons and the small business man who is not prosperous enough to dedicate his life to golf; (2) housewives who feel the need of exercise more varied than that provided by the washtub, the gas range and the sink, and (3) the smaller type of boarding schools, both preparatory and college, which use the radio exercise period to supplement their rather limited means for providing gymnastic instruction.



But what a substitute, say the critics, for the wholesome, outdoor exercise they should be getting! Granting that outdoor exercise is the ideal kind, is it not better to get an indoor workout by calisthenics than never to exercise at all? Is it not better to sit up in the second balcony than to miss the show? The critic scores again with the suggestion that only dumb, driven cattle would take part in any such performance as a calisthenic drill over the radio. But would it not be much more stupid to sit down and live the inactive physical life that one's work thrusts on one without ever making any effort to keep the body in any sort of healthy vigor?

Where did all these ideas about the need for exercise originate? It is a great fad these days to discount the value of the "daily dozen," and it is about time to take stock to see which ideas are fads and which are really sane rules of health.

It was once thought that man's primitive ancestors were magnificent physical specimens, with the beauty of Apollo and the strength of Hercules, free from the diseases which beset modern civilized lives. Somebody is always taking the joy out of life; and scientists now maintain that these descriptions do not fit the fathers of our race. In spite of his free existence in the great open spaces, primitive man, it seems, was neither so beautiful nor so healthy as one would like to think him. Dr. Logan Clendening has written a most delightful article devoted to the "myth of the magnificent brute, pithecanthropus erectus." However thoroughly the myth of his beauty and good health under primitive conditions may have been exploded by modern discoveries, the



fact still remains that old pithecanthropus has handed down to posterity a body of such a type that it seems to demand more thoroughgoing exercise than the average cliff dweller in modern city apartments finds in his everyday life. Granting all the complicated reasons for the inconvenience the human body machine suffers from city life, exercise certainly seems to be one of the points around which health difficulties arise. One just cannot seem to get the best results from a routine that includes no more lively exercise than whacking a typewriter, punching an adding machine or, at the most, running to catch a car. It is the effort to meet these difficulties of confinement and sedentary habits which has brought forth the development of "health consciousness" in America and all this talk about the need of exercise.

We Americans have been accused by many of our health authorities as well as by outside observers of being excessively health conscious. Though we may be too health conscious, we are not too healthy. In spite of our gymnasiums, swimming pools, golf courses, municipal beaches, Olympic champions and professional athletes, not to mention the doubtful benefits of our enormous output of health faddists such as vegetarians, nudists, "roughage hounds," nut eaters, starvationists and "anti-white bread racketeers," we have not been able to overproduce the supply of sparkling eyes and glowing cheeks. If you have any doubt of the truth of this statement, take a look at your fellow riders on the subway, interurban train or street car. How many glowingly healthy persons do you see? Pasty faces, poor posture, listless gestures and dull eyes are numerous. Much as we may regret the ravages wrought on human bodies by machine-age civilization, it seems unlikely that we can retrace our steps to a simpler existence. If there is no escape from becoming city cliff dwellers, and if our bodies rebel against confinement and inactivity, what can be done about it?

Here are some of the cures that have been offered: On the one hand we are told that we should tone up the muscles with exercises if we wish to digest our food, eliminate waste products and lengthen life. On the other hand we hear that exercise has nothing to do with these processes. The only good to be had from exercise is purely a matter of exhilaration and relaxation. The motive that impels one to go in for golf, handball, tennis, horseback riding or radio exercises—whether it is the effect on the digestive apparatus or the relaxation and exhilaration which these activities afford—is not so important as the fact that one does feel a need for daily exercise.

When one considers how this exercise is to be taken, again there is a conflict among the theorists. One side advocates a fifteen minute period of calisthenics on arising in the morning. The other side says that drill is all wrong and that what one needs is outdoor exercise and games. It might be noted in passing that those who have time for games do not play games, as a rule; they play one game. This means that they get action for certain groups of muscles but neglect others. But what is the consensus among experts in physical education, men who have tested the effects of both types of exercise? In a recent article in the *Journal of Health and Physical Education,* J. L. Rogers of the physical education department, National Education Association, gave a comprehensive survey of trends in modern physical education. He concludes that the best type of exercise programs will include both calisthenics and games. He points out that calisthenics are needed for "organic and skill development," which would indicate that he believes that calisthenics, or gymnastic instruction, is invaluable as a means of developing the body itself and of giving one the skills that mean perfect control of the body machine. He says this systematic calisthenic training should go hand in hand with games and outdoor sports to provide a fully rounded system of exercise.

No matter how health conscious one is, or how large the production of health measures, there is no way to get around the fact that the daily grind leaves little time and less incentive to get out and use what opportunities for exercise are offered to working people. Being responsible for the support of families, many persons at an early age have said farewell to the healthy activities of school days and have settled down to long hours and close confinement. With the depression sitting squarely on their chests, is it likely that they are going to be able to afford fees for golf clubs, dancing classes and athletic

clubs where they may get their exercise after the working day is ended? What proportion of these white collar workers and housekeepers can get to recreation centers within a reasonable length of time after work to enjoy whatever exercise they can afford? What about the weather that makes impossible any outdoor sports for days at a time? Under these conditions, a well balanced calisthenic drill seems to be the only daily exercise available to these people. Is it not conceivable that even the most scornful critic might concede that it is a convenience to be able to turn a button and have gymnasium instruction brought into the home? Why should not the radio bring the gymnasium class into the homes of people who want exercise and cannot get out and get it? Imperfect as is the present-day radio gymnasium class, is it not conceivable that the future may see it grow into a legitimate field for physical instruction?

Granting the handicap of having the time divided between advertising matter and calisthenics, the radio gymnasium does, even in its present state of development, bring a morning workout accompanied by music to the home at a time when people are clad in their pajamas, a suitable costume for exercise. It comes at a time when a few moments may be snatched for exercise. So far it is the only form of daily calisthenics made available to the average person in his home without expense to him, other than the cost of running a radio.

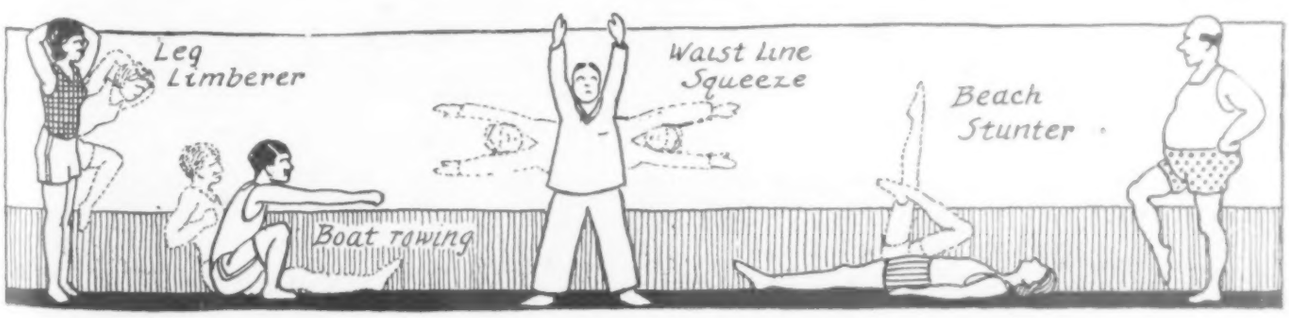
Sets of exercises are, of course, available on phonograph records and in books for those who feel they must have a daily drill, but the radio gymnasium class has the advantages of providing a living voice to give the commands, of offering variations from day to day in the program, and of including musical accompaniment which lightens the drill side and encourages faithfulness in even the long time devotee of the "daily dozen." When the alarm clock rings, one can rise to exercise with the "World's Largest Gymnasium Class."

The technic of a radio gymnasium class must be developed under peculiar conditions. Under the present radio system most exercise programs are sponsored by an advertiser who demands part of the time for his "continuity." The program is usually fifteen minutes in length, since time is sold in blocks of fifteen minutes, thirty minutes and an hour. Many of the sponsors do not send out exercise charts or any printed matter to assist in making the instruction more complete than is possible in the short time the program is on the air. Because the radio instructor is invisible to his audience, he has to give a great deal of time to the description of each exercise, and the listeners are required to concentrate every faculty in the effort to understand the exercise and be ready when the count begins. The most offensive feature of all, from the instructor's standpoint, is that his health instruction must sanction the commercial product which is sponsoring the exercise program.

The least creditable type of radio gymnasium class is that which guarantees claims for the benefits of the exercises which are as extravagant as those which the advertiser makes for his product. In this type of program one may hear a raucous voice proclaiming, "If you are a woman, I can make you beautiful. If you are fat, I can make you thin. If you are thin, I can make you fat." It appears that all one has to do is take the exercises and send in for some magic formula that is to transform one into a Venus, or give one the strength of a Hercules. One does not have to diet to reduce; one just has to eat in a different way! Too many exercise programs are interested in presenting an exercise class solely as a reducing device. These discredit themselves by their claims for the possibilities of losing weight by exercise and by completely disregarding the observations of many of the leading physiologists, which seem to offer conclusive proof that weight is controlled through food intake rather than by exercise.

In spite of all these difficulties, many radio exercise programs offer good sets of exercises that will give the average person a suitable workout in a short length of time and probably will start him off to work feeling more lively than he would feel if he had not taken any exercise.

Educators maintain that one of the main reasons why physical training classes are included in the school program is that bodily exercise has a definite value in building health and helping people to live more normal and better adjusted lives. The body building value of



exercise has long been recognized, but it remained for psychologic studies to reveal the advantages of bodily development in helping the individual to fit into his surroundings. If this is true for the school age, is not the radio gymnasium class equally valuable as a means of bringing a sane health program to persons who will have little or no opportunity to maintain in maturity the physique developed in youth? I feel quite as respectable directing a radio gymnasium class as I did coaching college athletics. It is a field of physical education with real possibilities. Its standards must be worked out and the technic must be developed through experience. While it may be early to lay down rules and to formulate pedagogy, it may not be out of place to mention some of the features that will possibly characterize the better type of radio exercise programs, especially since I have already outlined the things that should not characterize a radio class.

First, the class should be in charge of a thoroughly trained physical education instructor. Instead of the content of the program being solely related to the promotion of commercial products and given by pet announcers, the whole exercise program should be planned and given by a physical education expert.

Second, after five years' experience in conducting radio classes of various lengths, I have concluded that the best results can be obtained in a twenty-five or thirty-five minute period. This provides sufficient time for "continuity," for the calisthenic drill and for brief health talks and some consideration of the problems raised in fan letters.

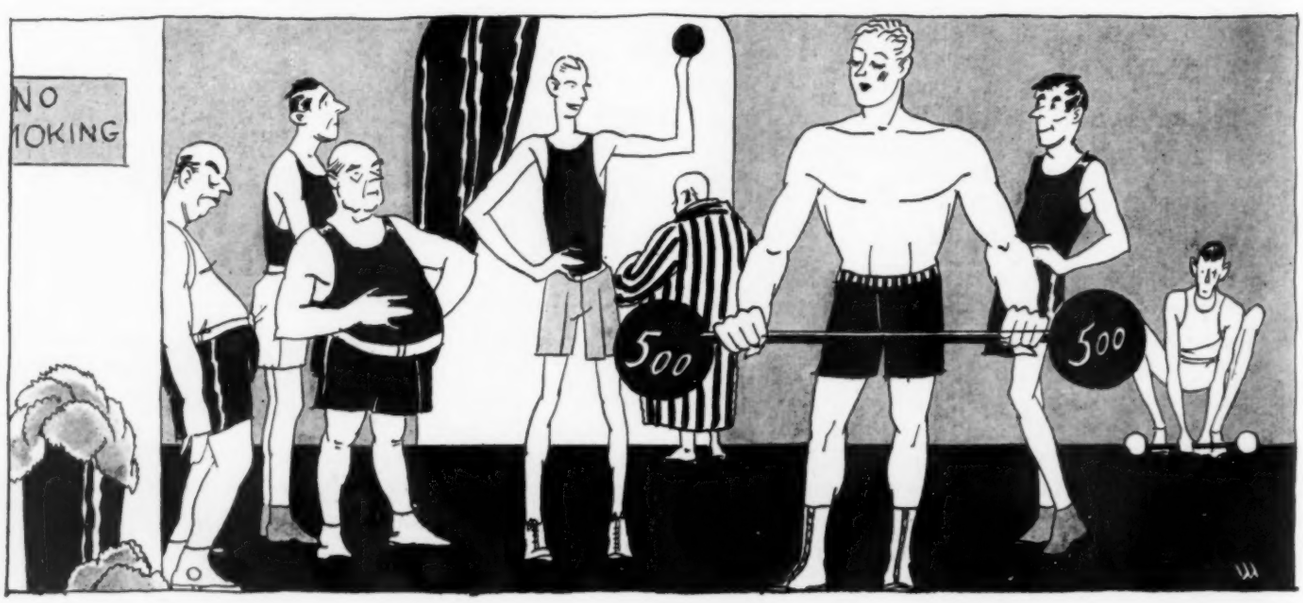
Third, the radio gymnasium class offers a golden opportunity for sane health instruction. It should be general, encouraging good health habits but keeping out of the technicalities of advice that belong in the province of medicine. There has been too much stress on exercise in relation to reducing and too little on its fundamental value in health building. Weight control should be considered in all its bearings on general health and not solely as dictated by current fads and fashions.

Fourth, the sets of exercises should follow a lesson plan based on the best current theories of what constitutes a suitable workout for the average city dweller of the middle class, since the audience seems to come largely from this class. Though certain of the exercises will be varied from day to day to avoid monotony, enough exercises will be repeated so that the class may become reasonably familiar with the lesson plan. This will diminish the need for extreme concentration by the class on descriptions of new exercises.

Fifth, a chart which indicates starting positions lessens the time needed for the description of each exercise. The chart can also carry health rules or health information as may be desired.

Music is most important. It should be lively and varied, and there should be perfect harmony between the rhythm of the instructor's voice and the music. There is a constant fight to be waged against the deadening of routine; this requires working out novelty exercises, introducing new features and keying oneself up to maintain an enthusiastic voice and attitude of mind, doing each exercise for enough counts to keep in close touch with the way the program must be sounding to the listeners.

I predict that some day the name of the radio gymnasium class will appear in the social register along with all the other noble educational activities. Who knows but that the radio gymnasium class may be one part of the technic which man will have to achieve in order to live sanely in this complicated civilization?



The Passing of Dulcimer

By Edith Boden

JUNE IN LABRADOR! After a four-day voyage, the mail steamer, which made the trip three times a month, unloaded me and my supplies into a leaky rowboat which accomplished a 20 mile journey to an out-of-the-world, five-family fishing village where I was to spend the summer as a teacher. My school was a shack, 10 by 12 feet, with boards and boxes for desks and seats; my student body consisted of a dozen youngsters, ranging in age from 6 to 14, whose education depended entirely on transient teachers.

On the first day, as my prospective pupils scurried about, carrying in boxes with school books, pencils and colored chalk—sources of such delight that the children frequently ran home to exhibit something and then came flying back with it—they were followed by a pitifully thin little girl, perhaps 4 years old, dressed in a faded blue garment much patched with red and gray fragments. Often she came just to the school door but never entered. She ran away when I called her and disappeared around the corner when I started to follow her. The mop of shaggy hair hanging over her pale, pinched little face almost caused me to miss seeing her wistful eyes, a glance into the depths of which made me aware later that she was hungry not only for food but for love.

"Her's Dulcimer, Miss," Bella explained. "Her bides with her sister Hettie who has bad spells of the coughing-disease. Hettie and David fetched her down from Dead Man's Cove a month ago to mind little Johnnie; but him died two weeks ago Sunday, so David will soon be carting her home."

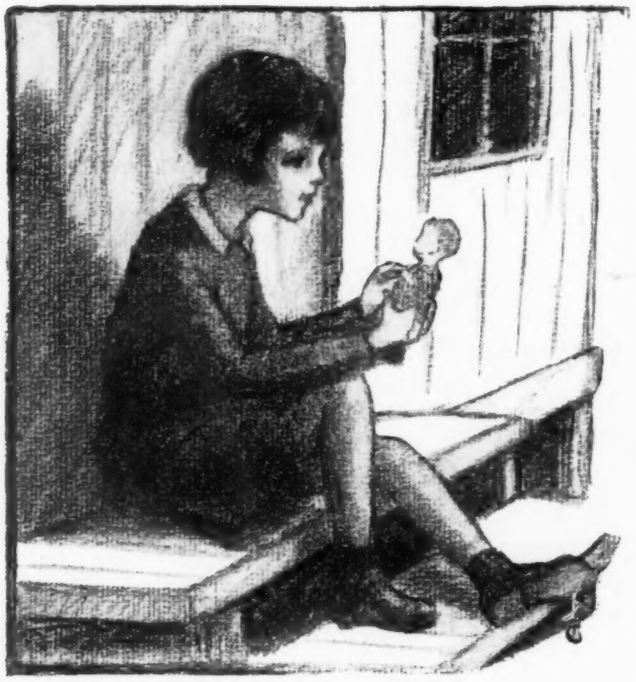
Thirteen year old Wilfred contributed, "They'd best let her bide, since Hettie's going to have another baby come this winter."

When in the most matter-of-fact way Absalom demanded, "How do you know that, my son?" Wilfred said simply, "I heared her tell Pappy and Mammy. Her said too that her hoped that if it had to die, it wouldn't be in the winter, for digging graves when the ground is froze and getting Parson to come for service do be wonderful troublesome."

The children agreed and enlightened me further concerning Dulcimer, while I recovered from my first intimation that to Labrador children the facts of life are not unknown or shocking.

"Her's 7," Thalia told me, "though her be wonderful small for her age. Hettie's 19 and they do be five brothers between them. Their mammy be dead of the coughing-disease and their pappy be off most of the time finding food. Hettie's man be just the same age as their pappy. But there warn't no one else for Hettie to marry down to Dead Man's Cove. It must not be much to, for it never had nary a school, not even a summer teacher to come. Dulcimer's never seen nary a school nor a teacher. But David says schools be not for the likes of her."

When I went to ask David and Hettie to let Dulcimer come with the others, I saw the child crouching on a bench in a corner behind the stove, her big hollow eyes looking first at them and then at me as David said firmly, "No, Miss,



her's 'stunned.' Her be only half-sove. Any one with a grain o' sense could tell that by just looking at her."

Hettie echoed him with, "You'd be just wasting your time a-learning the likes of her."

But after I had coaxed, David and Hettie exchanged some glances which I, of course, did not see; then David gave his permission for her to come, on the condition that I would give her a pencil, a tablet and homework just like Mary and Laban would have! Though I thought there must be a catch somewhere, I agreed.

So she came. After I got her, I hardly knew what to do with her for her only social contribution seemed the ability to put both her dirty little fists into her mouth at one time, a feat she performed perfectly, willingly and frequently, much to the delight of the children. Little by little she became more like the others. Eventually the washing of her little face included her ears; the brushing of her teeth was accomplished with a rag since she did not have a brush; her long hair, since David set his foot down on her having it short like Teacher's, was scratched with the family comb and pushed back out of her eyes until Bella and Thalia took pity on her and made it into pigtails. One braiding often lasted for several days.

One morning Absalom hurried in to announce, "I bet Dulcimer gets a whacking when Hettie sees her. For her's out behind the fish factory, and her has cut her braids off with the scissors. Here her comes now." I could hardly repress a smile at her appearance, but I knew what the consequences might be. Since the act was done, I felt it my duty to trim her hair a bit and go home with her on her first appearance. Fortunately, Hettie was having one of her spells that day, and she let Dulcimer off with a scolding.

Alas for Dulcimer's never talking! After her shyness wore off, she talked all the time. When I found out that she had never owned a "doll-baby," I took little celluloid Timothy out from my bags before his scheduled appearance as a surprise gift on the last day, to make him a part of school equipment. After his arrival, whenever Dulcimer felt the urge to talk she was privileged to take him and repair to the steps where she could talk to him, count to him and even "read" to him.

Yes, Dulcimer read. She was far from being half-witted. How I blessed the American boy who had suggested as he helped me assemble school material to take north, "Why can't I make an extra set of these word-cards labeled blue, red and green, with the name of the color printed in the color itself? Because maybe they'd know the color and could read it whether or not they knew the word." That was exactly the first thing Dulcimer did. How proud she was to pass around the room with the others and "read" the cards. Sometimes when a squirming rascal who had been to school a summer or two before failed to recognize "boy," "man," "this" or "that," she would pipe up, "I knows he, Miss." And she did.

She knew even more than I did sometimes. In order to build up for her a reading vocabulary of words which she already heard daily, I taught her to recognize such words as "fish," "cod" and "seal." One day as I pasted on her pre-primer book a picture which I called a boat, I was amused to have her exclaim reprovingly, "No, Miss, no! He do be a schooner!" So "schooner" went on the book.

She even studied arithmetic, being pushed and pulled along the primrose path of being taught by my "assistant" to count. How often have I heard the pupil-teacher coax, "Say one, Dulcimer."

No answer.

"Say one, maid."

Still no answer.

"Dulcimer, if you don't say one, you're stunned."

"Ain't!"

"Say it then."

"One!"

Sometimes she was equally loquacious, rushing along impishly with "ten-eleven-thirteen-fifteen-twenty." Then as the "assistant" turned to say sadly to me, "It do be wonderful wrong today, Miss," Dulcimer would shyly glance at me as she poked her tongue in and out through the hole where three front teeth were missing; or she would shrug her shoulders or gravely examine her stubby finger nails, which she was trying to let grow to look "like Teacher's."

One night the children burst unceremoniously into my kitchen saying, "Dulcimer do be getting a wonderful whacking 'cause Hettie can't learn her the homework."

Since the summer teacher is a combination of doctor, nurse, guidance expert, juvenile court worker, judge and family friend, I hastened over to find Hettie breathless with coughing as she glowered at Dulcimer who, trembling but tearless, stayed at a safe distance and nursed a bruise on her arm.

"There, Miss," cried Hettie indignantly but triumphantly when she was able to speak, "there, Miss, us told you her was stunned. But, Miss, since you wanted us to learn her, her's got to do what her's told, no matter. And her just won't."

In vain I protested that I had asked them to do nothing, but Hettie thrust into my face the child's tablet from the open page of which stared up accusingly my writing of a previous week, "Learn to count to five." Why, oh why, wouldn't you count for them, Dulcimer, when you could and when you knew what would happen if you didn't! Henceforth, promise or no promise, I saw to it that all her homework was prepared at school.

One noon several weeks later, the little lass came flying back almost before I thought she had time to go home. Her pinched browned face was almost white and her eyes were filled with tears, a thing which I had never seen before.

Her voice choked, "He carting me home, Miss. He carting me home today. Now!" The very suddenness of it overcame her.

"What did Hettie say?"

"Her say, 'Run, Dulcimer, run for Teacher. Quick!' "

The childish trustful manner said plainly that it was now my job to avert the calamity. But Teacher was powerless. David, for reasons of his own, had made up his mind to take her home and today.

Of course, he might have said to me and truthfully that he was a poor man and could not feed her longer. But all he would say was that today the wind was off and the fishing poor, and since he had nothing else to do, he was going to take her away. He finished with, "And what difference does a few more weeks of schooling make to she anyway? Her'll never get any more."

Sadly Dulcimer and I returned to gather a few trinkets of colored paper, crayons, a pair of shiny little scissors, some tiny cakes of soap (a highly regarded gift in Labrador) and two new story books which I hoped some one would read to her.

When I took her in my arms and said, "Would you like to take Timothy too?" her little body fairly trembled as her hands reached out for her first doll. Clasping him tightly, she said unbelievingly, "Mine, Miss, Mine?"

"Yes, dear, and you're to play with him every day and take him to bed with you at night. Will you?"

"Yes, Miss." She threw her arms around my neck, gave me a moist kiss, slipped off my lap and darted out the door.

I watched her speed across the boggy ground toward her home. At the village spring she met small Laban, who looked, listened and bent gravely to imprint a good-by kiss on Timothy. Then away ran the two. At her gate they came on Mary who joined the procession; and then like Chicken Little and his followers, the three ran on and turned the corner out of my sight.

When school was again resumed, the children spoke sadly of Dulcimer's empty place and said that Hettie would bring her over to say good-by to us. When they came, Dulcimer was dressed in a boy's much-mended brown sweater and a woman's old green felt hat which almost swallowed her up. She carried her entire wardrobe and her new treasures, except Timothy who was hugged in her arms, in a clean, half-filled pillow case.

Hettie was in a bad humor. As soon as the children had obeyed my command to run down to the shore where the three of us would join them, she burst out, "Dulcimer do be giving me the bad words. Her says Miss said to play with the doll-baby every day and to have her bide with she at night."

"I did say that, Hettie. Dulcimer is telling you the truth."

Her face changed when she learned that the little girl had not "given her the bad words," but she herself was disappointed. As we walked toward the shore, Dulcimer, since her hands were too full to touch me, contented herself by squeezing along and bumping against me. I felt her, but it was instead to Hettie that I spoke: "I really want Dulcimer to play with the doll. I know that in Labrador playthings are to be kept on a table or shelf and just looked at. But I want you to tell your father that I said that. Will you?"

"Yes, Miss," she said sadly, "I will if you're right set on it. But it do be the very first doll-baby us has ever had in our house. It is a wonderful shame to spoil it. It would be right wonderful to hang it on the wall with a string to be a picture. I seen a lady once what had three doll-baby pictures hanging on her wall. Shocking pretty they was, too, Miss."

David was beckoning and calling impatiently, so the two sisters said good-by to us and scrambled into the boat. Dulcimer's little face smiled sadly as the punt started off. A lump came into my throat as I saw her tight clasp of her beloved doll-baby. As I called to her for the last time, "Good-by, dear," and then realized that I should never see her again, I added, "Be a good girl."

Her thin little voice floated back over the noise of the sputtering engine and the widening stretch of water, "Good-by, Miss, and the same to you."

All in a Day

Is the Surgeon's Leisure Merely a Mirage?

By

Florence C. Johnston

THE SURGEON put down the last scalpel, handed the waiting nurse the remaining bit of gauze bandage, wiped the lips of the quiet patient and heaved a sigh of intense relief. It had been a long, hard day. Six major operation with only a half hour's rest at noon. Even then, he had not had lunch, for necessary details of hospital management had to receive attention and there were many questions to be answered. What a help it would be if hired assistants might somehow be able to read his mind and then act wisely and with clear, good judgment on their own initiative. Why could not a man pay for immunity from just such interruptions?

Hunger was a matter of small moment, however, compared to the pangs of physical weariness which had overtaken him at the close of this long afternoon. The muscles of his right arm and fingers ached from holding the knife so constantly. His back had almost rebelled from stooping constantly over the lad who lay inertly on the table before him. His legs had never been so tired, not even on that well remembered mountain climbing trip he had taken on one of his rare vacations. The constant inhalation of ether in the close air of the surgery had left him a bit sick. He might have saved himself this discomfort if he had eaten lunch. He had a feeling of sympathy for his attendant nurses, especially the assistant surgical nurse, a new girl who had seen just a week of service with him. He had noticed how white and fagged she looked before he had started on the last appendectomy. He would have to tell her to take things a little more easily and not to let her work get the best of her.

He wondered, too, as he watched his stenographer busily taking his last few words of description, whether he were growing old. He seemed to worry more concerning his patients; but then, the six operations he had done today had not been easy. There was that cancer case with a horrible involvement of vital organs, deep seated and spread over a large surface. If only the woman had come to him a year ago for operation after he had advised her of what he feared! Now he didn't believe she would last a month, although he had done what he could for her. Even at this late date he had given her the best of his surgical knowledge and skill in the vain hope that a miracle might occur.

Then there had been the wife of his friend Dr. Gray. A gallbladder removal with all the delicate manipulation necessary in getting it out had taken another hour of his time. It had been only one of hundreds of such operations he had done, and he had no fear whatever of the successful outcome. But he had let the doctor, her husband, into the operating room; this was something he rarely permitted on the part of relatives of the patient, and the man had been overcome with terror and had blubbered like a baby in the midst of his own crucial task. It had almost unnerved the surgeon when he had

Thin hands grasped at his coat sleeve. "Mine baby, mine leetle baby. You feex heem up queeck, ain't it, Doctor?"

such need for calm and steady fingers. The woman herself had gone on the table with twice the courage of her anxious spouse. It would be something for the others to relate and joke about at the next medical meeting.

And then there was that boy, the last patient, who had really called for so much of his wisest judgment. The appendix having ruptured, poison raced through his system by way of the blood stream. Had he been able to check it? Would the lad's naturally robust constitution and clean life help to pull him through? Only the next few days would tell; but he had hopes for him, and he knew the skill of his nursing staff.

All through this operation he had been anticipating the ride home in the quiet relaxation of his comfortable car. His chauffeur was trustworthy and careful to the last degree in the observance of the rules and regulations of traffic. He would have time to stretch his tired limbs and forget the troubles of the long day. Angela, his beloved wife, must not see him tired or disturbed. They were to have company at

dinner; guests were a novelty which they had not enjoyed for a long time. He had so little time for social engagements, and he knew he was missing a great deal on account of it. Furthermore, it was not quite fair to Angela.

In anticipation he could almost sense the relaxation of his hot bath; the thought of getting into his dinner clothes appealed to him. After the party was over he would talk to Angela about that long deferred trip to California. They had promised themselves such a vacation for months, but it had been so hard for him to get away. In a week, perhaps, or two weeks, this batch of patients would be well enough to leave in the care of his young assistant.

"Good night, Miss Murray," he called cheerily as the young intern and the orderly rolled the patient out of the surgery, and his surgical nurse was gathering up the instruments preparatory to having them sterilized for tomorrow's task. "Let's call it a day."

Pulling off his surgical coat and donning his top-coat, he reached for his hat and started down the long corridor to the door where he could now see his chauffeur awaiting his arrival.

A good night word for the chief nurse as he encountered her in the wide hall, a glance into the reception room, and then his hand reached for the outer door. A commotion from behind him momentarily attracted his attention.

"Oh Doctor, Doctor," exclaimed an excited voice. Thin hands grasped at his coat sleeve as a distraught woman, who had rushed out of the waiting room, sought to bar his progress. "Come and see heem. Mine baby, oh, mine leetle boy! He was runned over by a beeg truck. Beeg Hans, the Swede, the garbage man, but he did not mean to done it. No one would hurt mine leetle boy if he could help it. But you! you feex heem up queeck, ain't it, Doctor? You feex everybody up so good. See, I have run all the way from Seexteenth Street. I would let nobody hold heem but me. Joe, he does not know! Oh, what will he say when he find out it is hees baby what got hurt? Oh, Doctor, you will feex heem right away now, won't you, Doctor?"

The woman was on her knees now, pulling at him, imploring him with clasped hands while he bent over the still little form which the hospital attendants had stretched out on the wicker settee in the waiting room.

With skilled fingers he went quickly over the little body, looking for possible bruises and contusions other than the injuries to the leg, which was palpably broken in two places. Even then there flashed into his mind, incongruous as they were, his plans for an evening at home. He would call young Dr. S——, his assistant, who would do the job well. He ought to let him have the experience anyway.

"Oh, Doctor, mine leetle boy! Only you and the good Lord can save heem. Leetle Joey, he needs you so."

One glance into the great dark eyes of the agonized mother, a gentle feeling of the pulse of the little patient now moaning in pain on the settee, and the doctor straightened up in his quick, business-like manner. Unhesitatingly he gave his commands: "Call the night nurse and have her get this patient ready. See Miss Murray and have her prepare the operating room at once. Telephone my wife and tell her I will get there as soon as I can, but not to wait for me"—quick orders succinctly given and as rapidly carried out.

Removing his hat and shaking himself out of his coat, the doctor retraced his steps in the direction of the surgery.

The Doctor's Wife

By

Helen MacKnight Doyle

Artists have painted,
Poets have sung,
Sculptors have written in stone,
The story of glorious, unselfish deeds
And quiet response to humanity's needs,
That belong to the Doctor, alone.

But come now, ye painters;
Ye poets, draw near;
Though tales of his courage are rife,
There's another whose virtues you also should show,
His faithful companion for weal or for woe,
The eminent Doctor's good wife!

Grouches she's conquered;
Pleasures she's missed;
Hours she has waited in vain,
While impatient patients continued to scold,
And a delicious dinner grew heavy and cold,
And the maid vowed she'd leave, once again.

Here's to the woman,
Stalwart and fine,
Valiantly doing her part,
The Doctor's boon comrade, true sweetheart, best friend,
Who lovingly stands by his side to the end,
The wife of his home and his heart.

"CAN HE OUTGROW IT?"

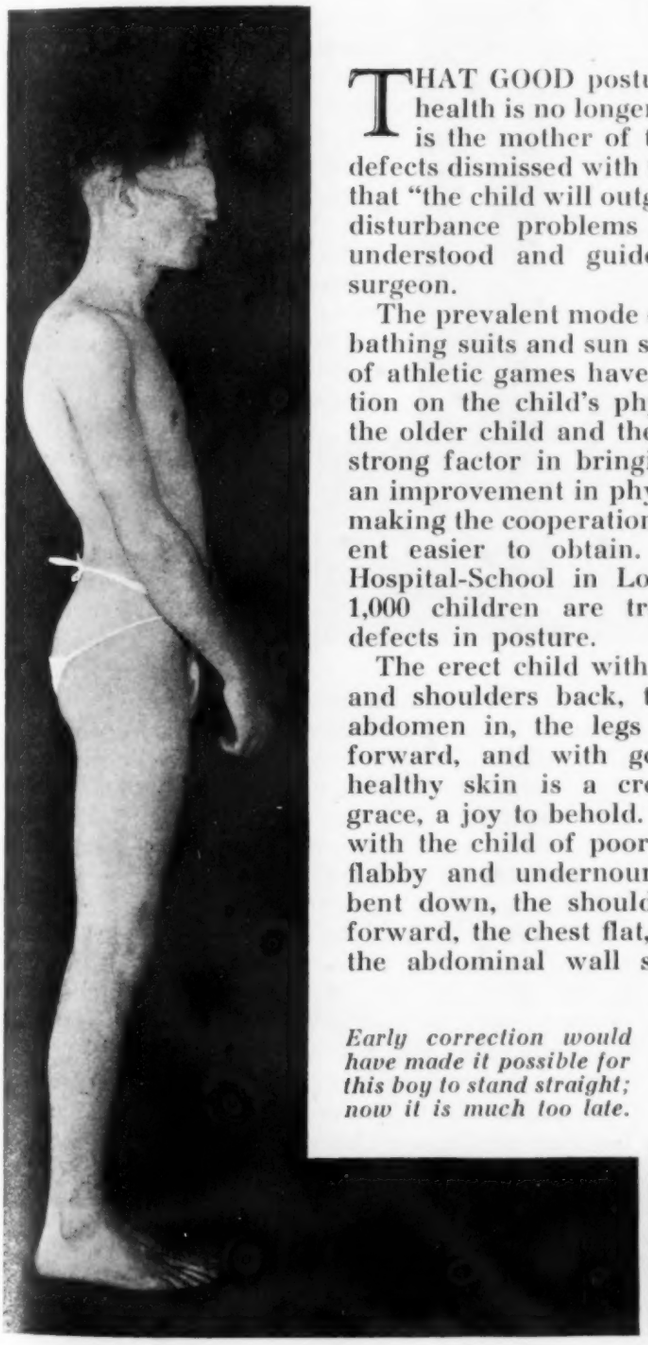
An Article on Poor Posture and Your Child's Health

By A. BROCKWAY

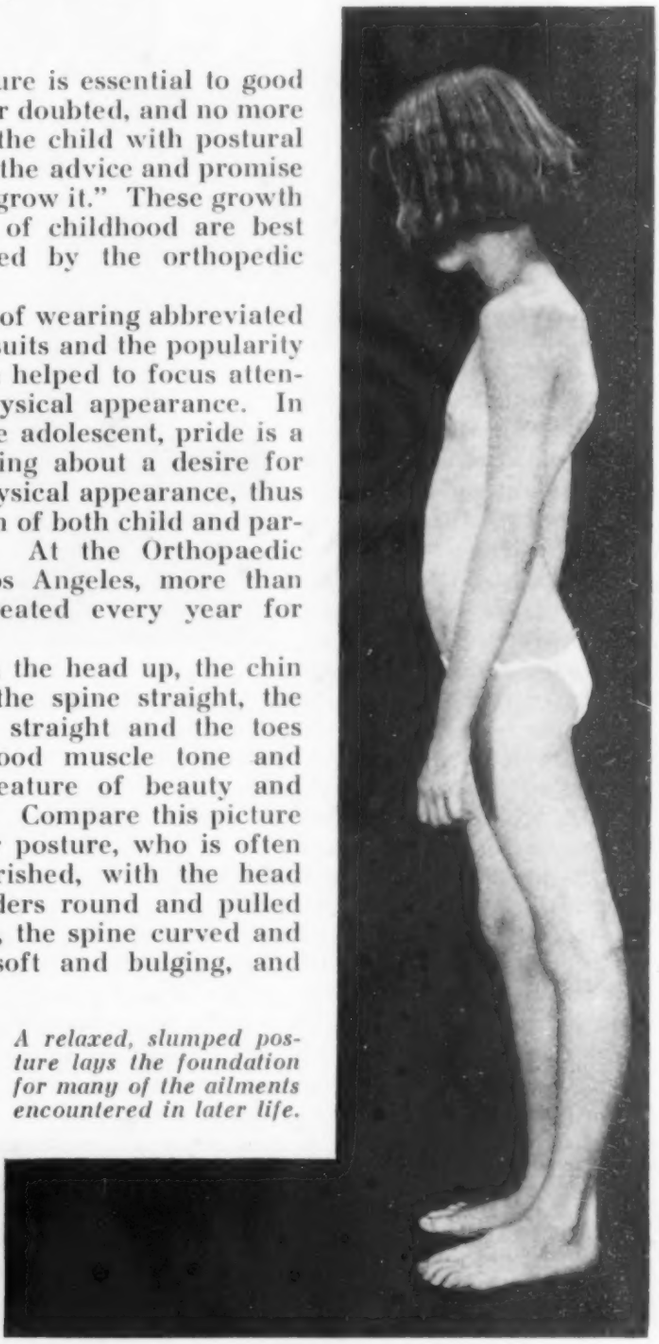
THAT GOOD posture is essential to good health is no longer doubted, and no more is the mother of the child with postural defects dismissed with the advice and promise that "the child will outgrow it." These growth disturbance problems of childhood are best understood and guided by the orthopedic surgeon.

The prevalent mode of wearing abbreviated bathing suits and sun suits and the popularity of athletic games have helped to focus attention on the child's physical appearance. In the older child and the adolescent, pride is a strong factor in bringing about a desire for an improvement in physical appearance, thus making the cooperation of both child and parent easier to obtain. At the Orthopaedic Hospital-School in Los Angeles, more than 1,000 children are treated every year for defects in posture.

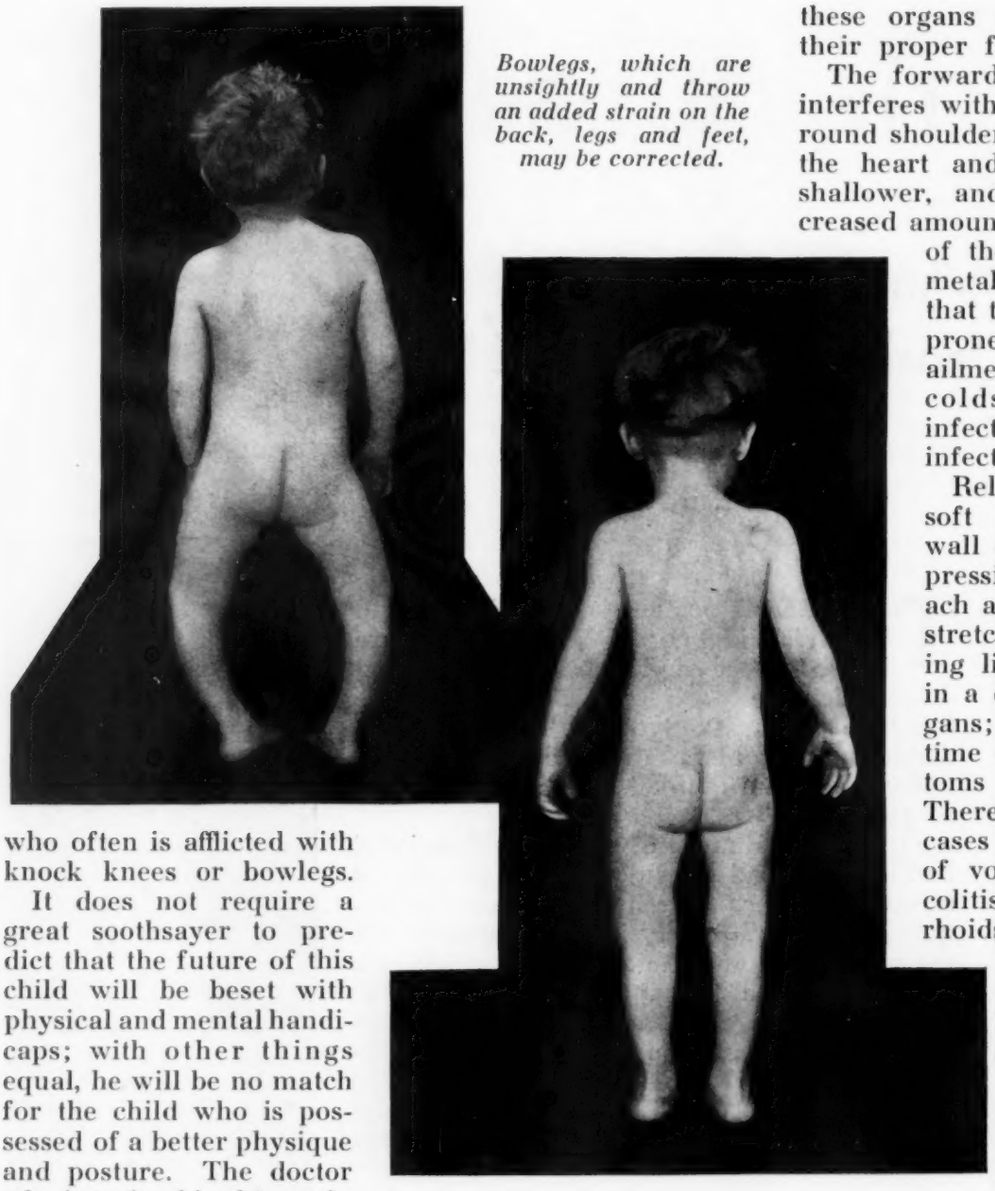
The erect child with the head up, the chin and shoulders back, the spine straight, the abdomen in, the legs straight and the toes forward, and with good muscle tone and healthy skin is a creature of beauty and grace, a joy to behold. Compare this picture with the child of poor posture, who is often flabby and undernourished, with the head bent down, the shoulders round and pulled forward, the chest flat, the spine curved and the abdominal wall soft and bulging, and



Early correction would have made it possible for this boy to stand straight; now it is much too late.



A relaxed, slumped posture lays the foundation for many of the ailments encountered in later life.



Bowlegs, which are unsightly and throw an added strain on the back, legs and feet, may be corrected.

who often is afflicted with knock knees or bowlegs.

It does not require a great soothsayer to predict that the future of this child will be beset with physical and mental handicaps; with other things equal, he will be no match for the child who is possessed of a better physique and posture. The doctor who is trained in this problem can predict with a great deal of accuracy what ailments and disorders children with various growth faults will be liable to suffer.

First of all, what is good posture? A child with good posture stands and sits erect and moves with grace and ease. In these movements the child with such a body or machine expends the minimum of energy with the least waste of friction and with the maximum of efficiency. In the child of poor posture the reverse is true. He maintains the upright position by constant muscular effort because the body is out of balance. While this child may be active, still he is wasting precious energy that is needed for growth and development. The fatigue resulting from this waste of energy lowers the child's resistance and makes him an easier prey to the various infections with which he comes in contact. Furthermore, this relaxed slumped posture means crowding of the heart, lungs, stomach, intestines, kidneys and all the other viscera, with attending congestion of these organs and interference with their proper function.

The forward drooping of the head interferes with proper breathing; the round shoulders and flat chest crowd the heart and lungs. Breathing is shallower, and there follows a decreased amount of oxygen to the cells of the body and a lowered metabolism, with the result that these children are more prone to all the respiratory ailments, such as frequent colds, sinus trouble, ear infections and tuberculous infection.

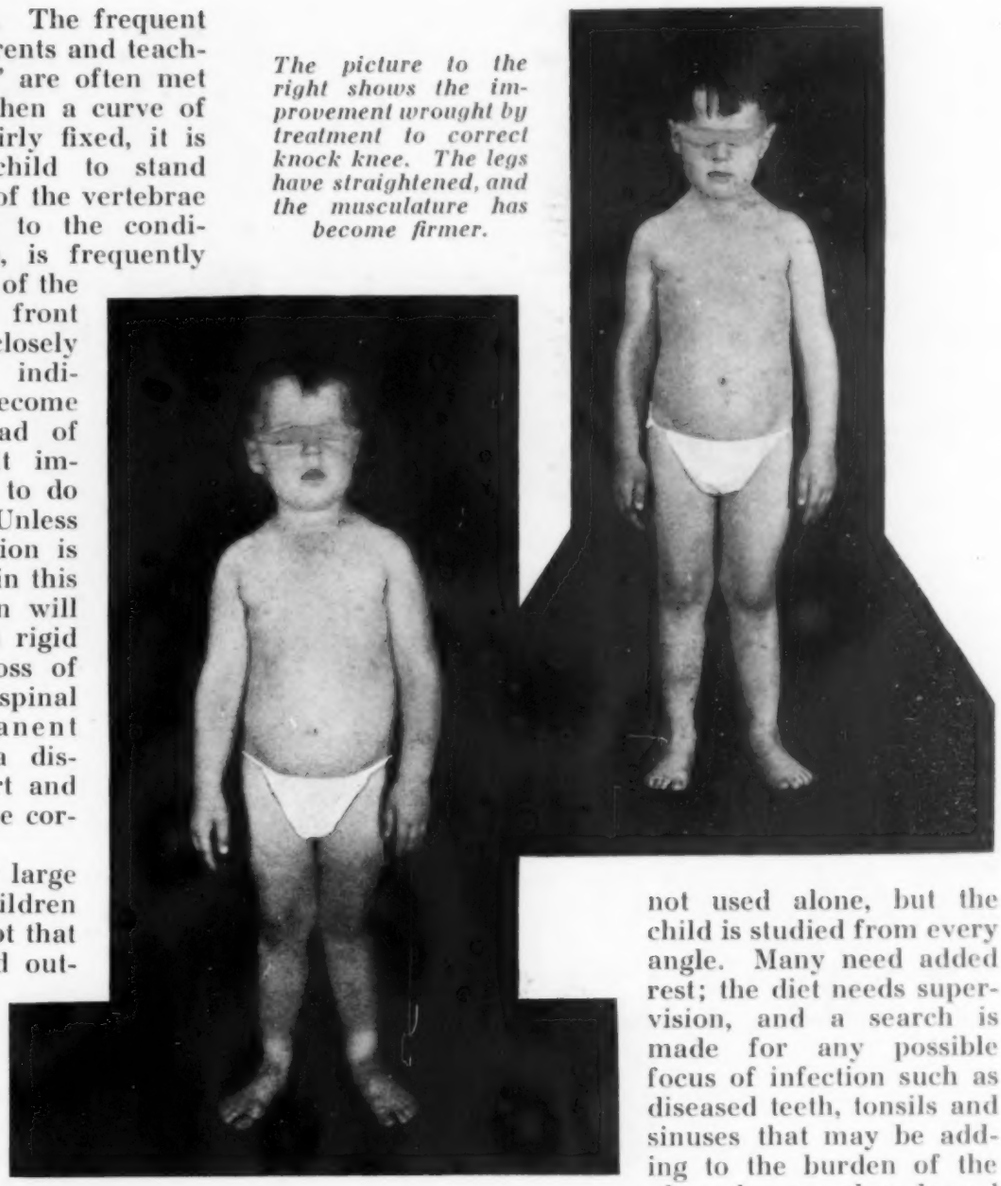
Relaxed posture with the soft protruding abdominal wall causes a crowding and pressing down of the stomach and the intestines and a stretching of their supporting ligaments. This results in a congestion of these organs; increased emptying time and a variety of symptoms may be manifested. There is no doubt that many cases of indigestion, even of vomiting, poor appetite, colitis, constipation, hemorrhoids, restlessness, lack of concentration and irritability are closely related to poor posture. In many of these children no focus of infection can be found to account for these symptoms, and treatment directed toward improvement of the posture often results in surprising improvement. Left untreated, these patients will surely continue to pay the penalty in later years, and it is safe to prognosticate that their medical history will be dotted with appendicitis, gallbladder and hemorrhoid operations, not to mention all the ills that go with chronic constipation.

In young children, fatigue and irritability are many times the only symptoms of flat feet, knock knees or relaxed posture. In future years these children, grown to adolescence and maturity, are going to show the effects of this constant strain and wasted energy in painful feet, legs and back, menstrual disorders, arthritis and sciatica. The wasted nervous energy expended as a result of the physical overload may manifest itself in the form of neurasthenia and endocrine disturbances.

Some children, usually of the tall slender type, who are growing rapidly between the ages of 12 and 15 years, show a rather severe

degree of round back. The frequent admonitions of the parents and teachers to "stand straight" are often met with no response. When a curve of the spine becomes fairly fixed, it is impossible for the child to stand straight. A softening of the vertebrae of the spine, similar to the condition found in rickets, is frequently observed. The weight of the body, crowding the front borders of the bones closely together, causes the individual vertebrae to become wedge-shaped instead of square, and makes it impossible for the spine to do anything but curve. Unless a child in this condition is treated by one versed in this problem, the condition will go on until there is a rigid "poker back," with loss of much of the normal spinal motion, with permanent crowding and with a displacement of the heart and lungs that can never be corrected.

The picture to the right shows the improvement wrought by treatment to correct knock knee. The legs have straightened, and the musculature has become firmer.



Statistical studies of large numbers of school children show without any doubt that the physically fit child outstrips the mental attainments of the more unfortunate group of children with poor posture. This is not surprising when one considers the great amount of physical and nervous energy uselessly expended by the group with poor posture.

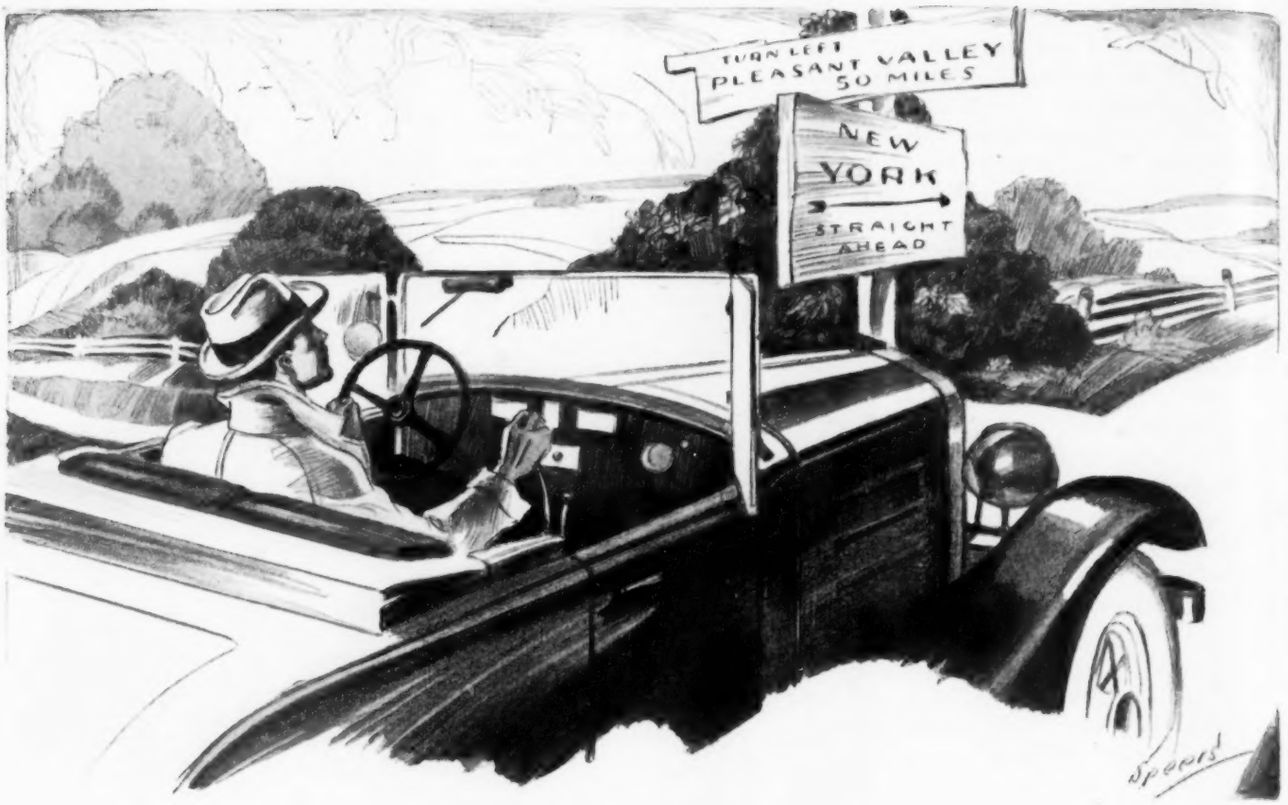
Aside from the increased number of physical ailments inherent in the child with poor posture, he is subjected to another definite handicap in adult life. It has been said with considerable justification, "Show me how you stand and I will tell you what you amount to." Although imperfectly so, good posture is an index of character. A leader in any field of life should impress and inspire others and radiate confidence; to do this, an erect, robust physique is an asset of no mean value.

These handicapped children are treated for their postural defects primarily by orthopedic measures, including gymnastics in the underwater gymnasium and other exercises, taught by trained instructors, not as class exercises but as individual instruction to meet the needs of each patient. Some children require proper bracing or corseting and nearly always proper shoeing. Naturally, these methods are not used alone, but the child is studied from every angle. Many need added rest; the diet needs supervision, and a search is made for any possible focus of infection such as diseased teeth, tonsils and sinuses that may be adding to the burden of the already overburdened child. Disorders of the endocrine glands are often found that need correction especially in the obese child.

With this corrective guidance, not only is there a definite improvement in the posture and figure of the body but there is an accompanying improvement manifested in the child's health.

I do not wish to give the erroneous impression that faults of posture are responsible for all the ills to which human flesh is heir. However, I do believe that growth faults are a big factor in determining the good or ill health of the individual, and I do not think that this part of the problem is sufficiently appreciated either by the layman or even by a good many of the medical men.

Early guidance with the aid of an orthopedic surgeon will go a long way toward correcting these faults before the deformity has become well established; in addition, it will make for better health throughout life.



TRAINING FOR ATHLETICS AND HEALTH

CHAPTER VI

Byways on the Road to Health

SOME TIME AGO a man started in an automobile from San Francisco with the purpose of driving across the United States, his destination being New York City. For several hundred miles this man followed the road signs along the transcontinental highway. Then one day, weary of the monotony of the smooth highway and of the sameness of the scenery, he stopped at a crossroad where a sign read: "Turn Left. Pleasant Valley 50 Miles."

He was about to shift gears and send the car on to the destination he had set for himself, but the words Pleasant Valley kept playing in his mind. "Why not?" said the man to himself. "Fifty miles is not far. I'll just take a look at Pleasant Valley." And so he took the byroad. It was not so smooth as he had expected; but he continued, spurred on by his whim. In Pleasant Valley another sign caught his eye: "25 Miles to Whispering Caves."

"Whispering Caves," repeated the man to himself. "How fascinating! It won't take long. I'll just run over and see them."

After two days of exploring byroads in the vicinity of Pleasant Valley, this man finally returned to the highway. But he had not gone 50 miles before another sign intrigued him and he was off on another byroad. For days he wandered around on byroads; his destination, New York City, had become a hazy fantasy in his mind.

One day he awoke to the fact that his vacation was nearly over, although he had not traversed a third of the United States. In a frenzy he hurried back to San Francisco. Other years came, and each year, on starting out for a trip, he made it known that his destination was New York City. He never reached it, though, for he always spent his time in trying out a new byroad.

On the road to health there are many byways to tempt one. But the destination of health is never reached by those who are continually exploring byways. One of these deviations from the regular highway is labeled tobacco. As a matter of fact, there is plenty of evidence that the tobacco byroad is one that leads the growing boy, at least, away from the main highway of health.

Various boys give various reasons why they left the highway for the tobacco byroad, but practically all boys admit that they turned aside because they thought it was a manly habit; to refrain from smoking, they thought, would be the same as joining the "sissy" group of boys. This false belief has caused many to start the habit.

In that word habit is to be found the worst indictment against the use of tobacco. If it were possible for one to smoke for a while and then stop whenever one wanted to, the use of tobacco would probably not be nearly so injurious in its consequences. But one starts in extreme moderation, perhaps one cigaret a day; then before one is aware of it one cannot get along without several cigarets daily, and the number increases with the days.

Acquiring a habit is a peculiar experience. It creeps on one and takes possession before one realizes it. Are you aware, for example, that each morning when you dress you always put the same shoe on first? It may be your right foot and, if it is, you put your shoe on that foot first. To try to put the left shoe on before the right would seem awkward and slow. You have acquired a similar habit in regard to the arm you put into your coat sleeve first. If you do not believe these facts, watch yourself for a few mornings when you dress. You will be surprised at how firmly your habits of dressing have become established. In a similar manner the tobacco habit takes hold; and when one wants to stop, it is extremely difficult.

The use of tobacco becomes just as fixed a habit as the methods of dressing. However, habits of dressing are harmless, while the tobacco habit does real harm. Would you, for example, throw sand into the gears of your new car? Indeed you would not, if you expected it to run. Tobacco may have as definite an effect on the smooth running of the inner machinery as sand does on the machinery of your car.

Probably the first question that comes into one's mind when the subject of tobacco is being discussed is: How is it that so many men use tobacco with no apparent ill effect? That question is best answered by stating that all the available facts show that tobacco does not have nearly so harmful an effect on men as it does on growing boys. A man's body has matured, and his body machinery is able to offer a resistance to the poison in tobacco. A boy, on the other hand, has immature muscles, an immature heart and an immature nervous system which are unable successfully to combat tobacco poisoning. Practically all authorities agree that tobacco is harmful to boys.

To begin with, tobacco contains a narcotic poison called nicotine. There is sufficient nicotine in an ordinary cigar to kill two men; but, of course, not all this nicotine is taken into the body in the process of smoking. Besides nicotine, tobacco contains pyridine, collidine, carbolic acid and furfural, and the smoke contains carbon monoxide.

Naturally, in the process of smoking, some of these poisons are taken into the body. Innumerable experiments prove that these poisons weaken the muscles and the nervous system. In addition, users of tobacco often display restlessness and jerkiness of movements. Other results noticed are indigestion, nausea, mild collapse, pallor of the skin and dizziness. Tobacco has also been known to disturb the blood pressure, cause shortness of breath and increase the heart beat, a condition that has come to be called tobacco heart.

In studying scientific information about tobacco, boys should consider especially the fact that the use of tobacco weakens the cells of the body, retarding their complete development.

In fact, all boys who are out for athletics know that their coaches forbid the use of tobacco during the training season. Such a rule is surely sensible, for, if tobacco weakens the muscle cells, it should be avoided. Not only does it injure the muscle cells but it shortens the wind of an athlete, and without the ability to breathe deeply a boy cannot hope to do much in athletics.

Finally, in regard to the tobacco byroad, it is safe to conclude that for growing boys tobacco is injurious. There does seem to be an honest difference of opinion about its effects on men, but all authorities agree that it is harmful to boys. Here again, weigh the facts and then decide what your course will be. If your goal is health, it will not take you long to make your decision.

There are other decisions, also, that you must make as you journey the road to health, for you will come to other byways. One of these concerns the alcohol habit; and once acquired, it is far worse than the tobacco habit.

Alcohol has so decisive an effect on the human body that scientists, physicians and

BY ALFRED E. PARKER

physiologists agree that it is not a stimulant but a narcotic, a drug that deadens and paralyzes the nerves. They agree, too, that when it is taken in considerable amounts, alcohol is a poison; for it is known, as the result of tests, that from ten to forty minutes after drinking alcohol, some of the nerve cells will be shrunken and distorted into small knots, and the nerves controlling the blood vessels will become depressed, resulting in a lowered blood pressure.

All authorities are agreed, too, that alcohol is a habit-forming drug. They have found out by years of investigation that all steady drinkers start in moderately and soon acquire a habit that seems impossible to break. Overindulgence in many types of foods causes a man to be ill and to lose the desire, for a time at least, of eating more of that type of food. Overindulgence in alcohol, however, not only poisons the system but increases the desire for more alcohol.

Surely, therefore, when one knows the harm it does to the body, one cannot consider alcohol a food. Proper food is the agent of the growth and repair of the body, while alcohol is destructive, for it stops the action of the digestive juices, thereby delaying digestion. When a physician prescribes alcohol for a patient, he does so because it is a drug and not a food. Being a drug, alcohol numbs the brain.

Appearances Sometimes Deceive

These facts should keep any boy away from such a byroad, even though some persons do insist on maintaining a wrong impression as to the effects of alcohol. Because a drinker is at first quite talkative and lively, the impression may be that he has benefited by drinking the alcohol. This, however, is a false vivaciousness, being caused when the centers of control in the nerves are deadened; control being lost, the drinker displays more activity than usual.

As the alcohol increases its havoc, nerve centers become completely dulled; self control is lost, and with the loss of self control, self respect also vanishes. Such a state is drunkenness, and drunkenness is temporary insanity. Indeed, continued excessive drinking often leads to permanent insanity. Investigations in England, Wales and Ireland show that 20 per cent of permanent insanity is caused by alcohol.

So do not be misled by any statements you may read or hear that alcohol increases mental activity. Tests prove that even moderate drinking impairs mental efficiency. The person who drinks can never hope to maintain his full mental efficiency.

But there is another angle to this question of drinking, for it has been discovered that drinkers have less resistance to infectious disease than have nondrinkers. Alcohol breaks down this resistance, and the body contracts disease more readily.

In the case of pneumonia, records show a much larger percentage of deaths among those who drink than among those who abstain. One reason for this is the fact that alcohol causes a loss in the ability of the white blood cells to destroy bacteria of the disease variety.

Inability to resist disease germs on the part of drinkers is further shown by investigations made by forty-three life insurance companies in the United States and Canada. These investigations were made between the years 1885 and 1908, and only those persons were considered who were of average physical condition when they were insured. It was found that the steady drinkers who indulged in at least one glass of whisky or more than two glasses of beer a day showed a mortality rate 86 per cent greater than the abstainers. Repeated investigations of this type, involving thousands of persons, prove that abstainers live longer than drinkers.

Still another fact that should interest you is that coaches and trainers the world over are emphatically opposed to drinking among athletes because they know that alcohol decreases endurance, speed and strength; hence it so reduces the bodily resistance that there is little comeback after fatigue.

Food Should Strengthen, Not Merely Stimulate

According to physicians, the muscles require certain types of food to be capable of much power. For this reason athletes are given muscle-building foods, such as vegetables, fruits, eggs, meats and coarse bread. An athlete is not allowed to have pastries and fats, for these foods do not create muscle energy; besides they are hard to digest. Like pastries and fats, alcohol does not furnish any help in muscle building. Instead, after a short period of stimulation, alcohol leaves the muscles exhausted, and there is the added handicap of decreased endurance.

Surely, the foregoing facts are sufficient to help you decide whether or not you will take this byroad or keep to the highway. However, I should like to mention an attitude which seems to exist among a small minority of high school boys who like to parade as he-men by carrying a hip flask and becoming intoxicated on Saturday night. In conversations with hundreds of boys, I have yet failed to find a boy who has any respect for the boy who drinks, and this includes conversations with boys who themselves drink occasionally. Whether or not you wish to make a fool of yourself is up to you, provided you do not injure an innocent party or break the law.

Drunken Driver Endangers Others

Only recently a family of five were riding in their automobile over an automobile causeway built out over a bay. It was just about dusk; and as this family rode along at a slow rate of speed, another machine came toward them, at the wheel of which was a drunken driver, a young man 20 years old. Just as the two machines were within a few feet of each other, the drunken driver, having lost control of his thinking powers, steered his car into the automobile carrying this family, with the result that the machine and its occupants were hurled into the bay. As so often happens in such an accident, the intoxicated young man escaped without injury, for his car remained on the causeway. Friendly rescuers strove frantically to save the family, but three of them were drowned. The drunken young driver is now spending several years in prison.

To be frank, if you are so weak willed that you cannot resist the alcohol byroad, there is not much chance of attaining health or success. You may fool yourself for a time, boasting that your case is the exception, but your bravado will not be lasting. You will apply for a position and will not get it, for business managers as a rule do not hire men who drink. They know that drinkers are unreliable, that their mental activity is abnormal and below par. You may boast that you drink and that your health is excellent, but your boasting will not be for long, because the poison that is in alcohol will eat its way into the life cells of your body and you will find yourself a weakling. No, you want to be a man, not a weakling. You should feel glad when you have passed this dangerous byway.

There is one other byroad—a drug, opium—about which one should know. Opium is a powerful habit-forming drug, and once it becomes master it is practically impossible to stop it, for the victim loses all self control. Lacking self control, the advanced addict desires only the drug; he neglects to eat food, and his body gradually starves to death. In truth, so vicious is this drug that it will transform an honorable person into a shameless degenerate.

"Use Doth Breed a Habit in a Man"

All that one ever needs to remember about opium and other such drugs, however, is that it is folly to take any kind of medicine unless one is doing so after consulting a competent physician. If one seeks expert advice when taking medicine, there is no reason why one should ever leave the highway for the drug byroad.

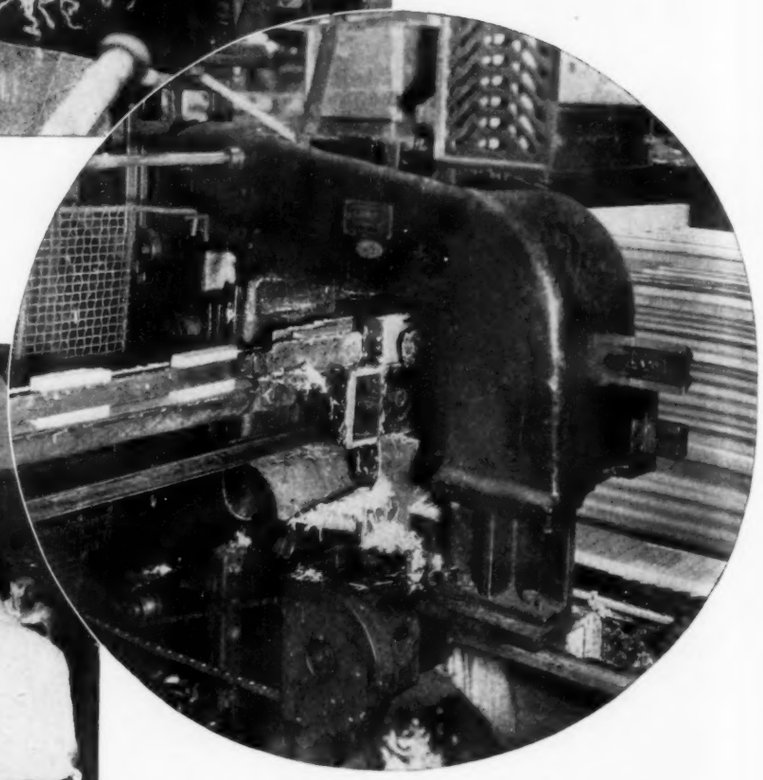
Again and again, as you travel the road to health, you will come on byroads. Whether or not you take the byroad or continue on to your destination is an important decision for you to make. Which way are you going to journey?

(To be continued)

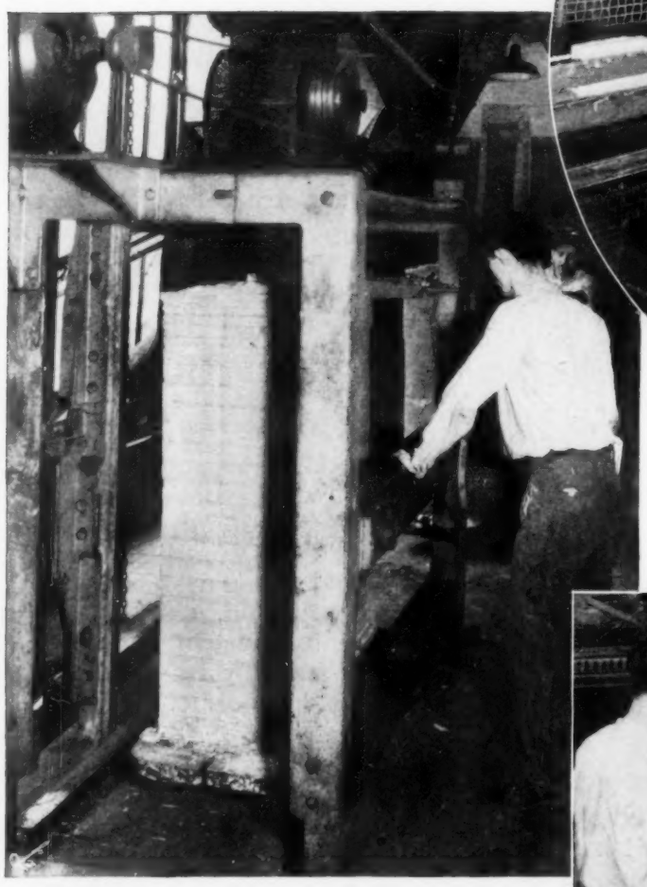
SOAP!

Dirt Wages a Losing Battle Against the Modern Soap Factory

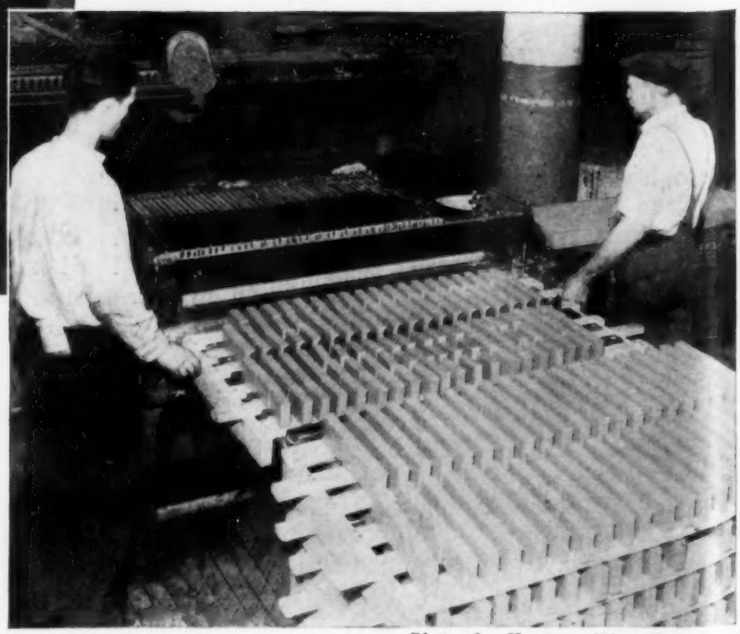
Soap chips in abundance for Monday's washing!



Putting the finishing touches and firm name on each bar



A 1,200 pound cake of soap ready to be cut into slabs of smaller size



The slabs, being cut first into long sticks and later into seventy-two small cakes each

Photos by Keystone View Company

Progress in Preventive Medicine

By P. M. Ashburn

PART IV

PRIOR to the Spanish-American War the medical profession and the reading public had been educated to believe that typhoid was a water-borne disease. While nobody attempted to prove that it was transmitted in no other way, and although a few men had considered other ways or had reported cases in which infection had occurred in other ways, it was generally conceded that, if the purity of the water supply was assured, typhoid could be easily prevented. The experience of the Spanish-American War shattered that complacence, for pure water supplies had been assured for all the camps of concentration; yet typhoid raged in them more fiercely than it had during the corresponding months of the Civil War, "notwithstanding our better knowledge of the causes of the disease and the better control of the sanitary conditions with which the discipline of the regular troops should be credited." Why was this? It was because every one was educated concerning only a part of the facts; every one saw as through a glass, darkly. For the epidemiology of typhoid is much more varied, obscure and complicated than was then believed. A board of medical officers, consisting of Major Walter Reed, U. S. Army, and Majors Victor C. Vaughan and Edward O. Shakespeare, U. S. Volunteers, was appointed to investigate the camp outbreaks. The voluminous report of that board, published in full in 1904, shed additional light on the obscure subject, but not enough to enable the British to avoid similar disastrous experiences in the Boer War or the Russians in the Russo-Japanese War.

The board's report showed that "infected water was not an important factor" in the spread of the disease. It showed that flies served as carriers of infection; that camp pollution was the greatest sin committed by the troops in 1898; that the disease developed in all regiments, in most instances within three weeks after arrival in camp; that "typhoid fever, as it developed in the regimental organizations, was characterized by a series of company epidemics, each one having more or less perfectly its own characteristics"; that a command badly infected with typhoid does not lose its infection by simply changing location, and that even an ocean voyage does not relieve an infected command of its infection. The report also showed that typhoid developed in about one fifth of the soldiers in the camps and that it caused 86.24 per cent of all deaths.

It was evident that we had not been properly educated in the prevention of typhoid. It was not a matter of applying the knowledge which we possessed. We simply did not know how to prevent the occurrence of the disease. While we knew of and guarded against the pollution of water supplies, we did not know about typhoid carriers, those apparently healthy persons who for years and years carry and excrete typhoid bacilli and who may, if they handle foods, infect them and, through them, many people. We did not realize that persons in the incubation period of the disease or convalescent from it might be passing from their bodies vast numbers of bacilli, and that they might be more dangerous in kitchens than kegs of powder or sticks of dynamite. We did not realize the criminality of putting ailing men at work in kitchens; cooks and kitchen police were detailed to that duty in turn or, if not in turn, they were assigned because they were not feeling well and were not fit for marching and drilling. Thus

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Since the importance of personal and camp cleanliness cannot be overestimated, the bedclothing must be thoroughly aired.

Century Photo

Physical examinations prevent the men from becoming sources of infection.

men who were about to enter the hospital or who had been recently discharged from the hospital were often on duty as food handlers. Not only did we not realize that men in whom typhoid was just developing were great sources of danger, but we were all too often, perhaps usually, unable to make a positive and definite diagnosis of typhoid until the end of the first week of the disease. The symptoms up to that time were not usually so definite and clear cut as to permit the differentiation of this from numerous other diseases; the only diagnostic laboratory test in use at the time was the Widal test of agglutination of a culture of typhoid bacilli by the blood serum of the suspected patient. This test did not usually give positive results until the patient had been sick for about a week. It then usually confirmed the suspicions aroused by the symptoms, but as a means of early diagnosis it had little value.

The Importance of Camp Cleanliness

The importance of camp and personal cleanliness was not generally appreciated and was rarely attained even when it was appreciated. The men were mostly untrained; discipline was lax and poor, and camp latrines were open trenches, foul, ill smelling and neglected because work about them was unpleasant and considered degrading. Flies bred in them, as in the vast amount of horse manure near the camps, in untold millions. They swarmed about latrines and kitchens and undoubtedly contaminated foods with typhoid bacilli. They were at the time considered a nuisance but were not regarded as dangerous or viewed with the disgust with which their presence on food is viewed today, owing to education.

If a man inhaled or swallowed a fly, it was regarded by his fellows as amusing.

Many medical officers attributed typhoid to food, but it was to irritating food, such as tainted meat, stale pies, unripe or overripe fruit and soft drinks, not to food contaminated by kitchen police, cooks or flies.

Popular Ignorance of Disease Prevention

The facilities for personal cleanliness were often inadequate. The water supply was sometimes hauled in barrels to the regiments; at Camp Alger "the water supply was quite limited and never was sufficient for other uses than cooking and drinking, and not that until about the 25th of June." At Camp Wikoff, Montauk Point, which was built late in the war for troops returning from Cuba, a great effort was made to profit by the earlier experiences of the war: "About 12 miles of pipe were laid from these wells, and the water carried to each regiment, where there was one faucet or more from which it could be drawn." Imagine one water faucet for each thousand persons to supply water for drinking, cooking, bathing, watering animals, washing clothing, and all the things for which water is needed in a crowded and dusty camp in summer! Of course, personal cleanliness was difficult or impossible, while the special cleanliness, hand-scrubbing after visiting the latrine, and other measures doubly necessary in the presence of a typhoid epidemic were out of the question. But people in general did not realize that this was important. It was esthetically desirable, but soldiers were not esthetes. That the esthetic was also important as a life-saving measure was not realized. The popular ignorance of disease prevention was great indeed.

Mass hygiene is largely the sum of the personal training and habits of the individuals composing the mass. But the habits that are suitable on the farm, in the village or in the city are not always suitable in the different environment of the camp, where, to a greater extent than in the country, the village or the city, each man is his brother's keeper; each is responsible for the welfare of his fellows. And education as to those facts was lacking. The very knowledge of them was largely lacking. Today every second lieutenant graduating from West Point, every National Guard officer of any training, every sergeant of the regular army, knows more of the practical measures for preventing typhoid than did the doctors in the Spanish-American War. And every recruit taken into the army is taught at the beginning of his career the things which he should do or should avoid for the protection of his fellows' health. Not only this, but the reading public throughout the length and breadth of the land know many of these things or can learn them from their municipal, county or state health officers, their family doctors or HYGEIA.

The people have been educated in the prevention of typhoid to the point where they are

approaching its elimination. During the World War it was a minor cause of disease in the army, instead of a major cause, as in previous wars; this is clearly shown by the accompanying tables. Typhoid, typhus fever, typhomalarial fever and fevers of unknown origin are grouped in the tables because in the Civil War and the Spanish-American War the bases of classification and of diagnosis were somewhat different and the other terms included much typhoid. Typhus fever, however, was uncommon in the Civil War and absent in the later ones. The term typhomalaria was not used in the Spanish-American or the World War. Nearly all such cases were really typhoid.

TABLE 1.—*Case Rates per Thousand Men*

	1861-1862	1898-1899	1917-1918
Typhoid and typhus fever....	70.69	91.22	0.34
Typhomalaria	41.84	.....	....
Fevers, undetermined.....	.....	27.00	5.93

TABLE 2.—*Death Rates per Thousand Men*

Typhoid and typhus fever....	19.61	9.67	0.05
Typhomalaria	0.94	....	....

It will be noted that the death rates were much higher in the Civil War than in the Spanish-American War. This was due to better care and treatment of the sick in the later conflict. It is true that the case incidence was not greatly different in these two wars, but in the World War it was greatly reduced. This reduction was due to four factors: (1) lessened introduction of the disease to camps, which meant fewer foci from which the disease could spread; (2) better camp installations, water supplies, sewage and waste disposal, and camp police; (3) better and more generalized education as to the means of prevention of the disease; (4) preventive inoculation. In considering these four factors and in trying to evaluate them, it is necessary to admit that it is impossible to determine accurately their values in relation to one another.

1. Lessened introduction of the disease to camps. In 1898, half of the regiments going to camp took cases of typhoid with them. In 1918 many of the large divisional camps did not have a case introduced from without, and none had many cases. Thus there were few or no sources of infection from which the disease could spread. This fact was the result of the decrease of the disease in civil life. The annual reports on the disease, published in *The Journal of the American Medical Association*, show that the death rate per hundred thousand people in fifty-seven cities with a population of 20 million fell from 19.59 in 1910 to 6.23 in 1918. This reduction was in large part due to the education of civil communities and civilian populations in the methods of disease prevention. Without a start in a camp, of course, the disease could not spread. This alone was enough to prevent such epidemics as those of 1898.

2. Better camp installations. In 1898, a camp site was a tract of land with a pure but often inadequate water supply. On this tract of land the troops, after their arrival, marked out streets, pitched tents, set up kitchens and dug open trench latrines which were breeding places for flies in myriads. In 1918, a camp site was a much larger and more carefully chosen tract of land, supplied with cantonment barracks or floored tents; screened kitchens; abundant piped water everywhere; wide streets, many of which were hard surfaced; screened kitchens and screened latrines protected from flies. In many instances there was water carriage disposal of wastes through excellent sewage systems; another method used was incineration of manure and waste. There were also entrance examinations of all men to detect the sick ones and to prevent them from becoming sources of infection. Good hospitals, clean mess halls, facilities for disinfecting dishes and utensils, amusement halls, reading rooms, places of clean amusement, and the absence of alcohol made better camps. No man contracting typhoid was discharged from the hospital until it had

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Screened kitchens, careful supervision and clean mess halls have made better camps.

been shown that he was not a carrier of the disease. In other words, precautions were taken to prevent the spread of diseases which might be introduced. In few instances did introduced typhoid give rise to anything which could be characterized as even a company epidemic. These measures were in themselves enough to prevent such epidemics as those of 1898.

3. Improved education of officers and men in hygiene. In 1918 the line officers were better educated as to the prevention of typhoid than were the medical officers in 1898. They had a textbook on the subject, and they had to give instruction to their men. They knew about carriers; they were aware of the danger of having sick men on duty in kitchens, of the importance of careful camp police and especially of kitchen cleanliness. The application of the knowledge which they had was in itself enough to prevent such epidemics as those of 1898.

4. The use of preventive inoculation, typhoid prophylaxis or antityphoid vaccination, by the injection of dead bacilli of typhoid under the skin for the purpose of exciting the production within the body of antibodies which would prevent the development of the disease. It is obviously impossible to say what importance should be assigned to this factor when it is applied in conjunction with the three other points. There is much reason to believe that it was important, but the only means of proving this would have been to use it alone, neglecting the other factors.

Such a test would have been hazardous. Since 1911, when this means of prophylaxis was made compulsory in the army and all soldiers were forced to accept it, education in the belief that this was an almost certain means of preventing the disease had been carried on vigorously by propaganda, orders, circulars and lectures.

A nonmedical officer in command of a large camp said to me that the other precautions against the disease were scarcely necessary in view of the general use of the prophylaxis. Even some medical officers were so convinced of its value that they doubted a diagnosis of typhoid when it appeared in vaccinated men. It is difficult to escape the effects of overconfidence.

Value of Vaccination

There are, however, figures for comparison of the value of hygienic measures with and without the aid of vaccination. These figures relate to army deaths from typhoid for the years from 1907 to 1915, inclusive, and to deaths among the employees of the Panama Canal for the same period. The average sanitary conditions were better in the army than among the employees during all the years considered. Most of the employees were West Indian Negroes. The use of antityphoid vaccination was begun in the army in 1909 and made universally compulsory in 1911. It was scarcely used among employees of the canal.

Diarrhea and dysentery are two diseases, or more properly groups of symptoms, resulting from divers causes; in general they spread in the same ways as does typhoid and are prevented by the same hygienic measures as those used against typhoid, which may be briefly summarized as measures to prevent the ingestion of human excreta. For this reason the measures against typhoid also appreciably reduce those diseases, as shown in table 4:

TABLE 3.—*Deaths per Thousand Persons*

Year	Canal Employees	Army Subjects
1907	2.49	0.79
1908	0.43	0.31
1909	0.27	0.25
1910	0.25	0.17
1911	0.20	0.19
1912	0.08	0.02
1913	0.07	0.00
1914	0.09	0.01
1915	0.05	0.00

TABLE 4.—*Diarrhea, Dysentery and Intestinal Diseases*

	1861-1862	1898-1899	1917-1918
Case rates per thousand men.	876.78	402.11	34.38
Death rates	10.37	1.93	0.08

The improved death rate was partly due to improved methods of treatment.

Results of Educative Measures

Summarizing the subject of prevention of typhoid, it is believed that the growth and popular diffusion of the knowledge of its methods of spread and its prevention, resulting in improved measures of public hygiene and more intelligent, constant and general personal hygiene, have been the most potent factors in reducing the prevalence of this disease and of those similarly conveyed; and it is believed that they give greatest promise for effecting their complete elimination. Bacterial prophylaxis, or antityphoid vaccination, is considered of value and should be used, but the extent of its value is unknown. It is known that it cannot be depended on to the neglect of hygienic measures. These must never be neglected.

Although this country has not had an extensive outbreak of cholera for two generations past, it is well to bear in mind that the epidemiology of that disease is much the same as that of typhoid, the means of prevention are much the same, and the value of preventive inoculation is apparently about as great.

If children are taught the foregoing facts, typhoid and its fellow infections of the intestinal tract will pass them by. It is not believed that the conditions of 1898, which so favored the spread of typhoid, can ever again occur, unless education fails and present knowledge is lost.

[NOTE.—In the July issue, Dr. Ashburn will discuss various types of parasitic worms.]

QUELLING THE QUACKS

By *Solon R. Barber*

Part V

As a physician, the "Professor" might have been a good photographer. He claimed that he had once operated a photograph laboratory and that in mixing his developing solutions he had learned much about chemistry and about the causes and treatment of disease.

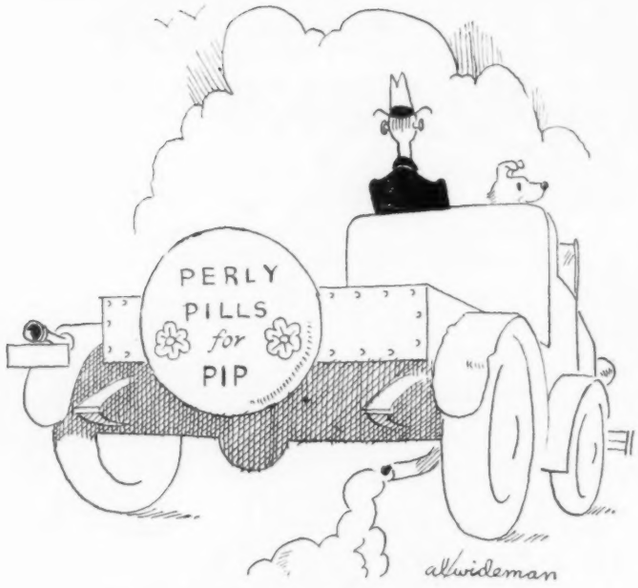
A TYPICAL QUACK, who now prefaces his name with the title "Professor," once operated a photograph laboratory in Chicago. He claimed, in a recent letter to an official of the Federal Food and Drug Administration that, in mixing his developing solutions, he learned much about chemistry. Also, he hinted, he gained knowledge of the causes and treatments for disease, particularly rheumatism.

Now rheumatism, as commonly understood, covers a wide variety of human disorders and may be caused by a number of derangements, infections or functional weaknesses. Doctors often prescribe salicylates in large doses for rheumatic conditions. The "Professor" moved to a city in California and set up shop as a manufacturer of a "remedy" which he guaranteed for all forms of rheumatism. He claimed he had used his preparation with great benefit after all the doctors had given him up. His case is not unusual. In more than a quarter of a century of enforcement of the federal Food and Drugs Act, government officials have instituted proceedings against several hundred falsely and fraudulently labeled rheumatism preparations. In many cases, manufacturers of such worthless stuff have been proceeded against and fined for violation of the pure food and drug law. Ridding the market of fake rheumatism cures has, for a number of years, been one of the important projects of government officials who are charged with seeing that the pure food and drug law is not neglected. The government reported in June, 1929, that a special campaign waged against rheumatism "cures" had resulted in action against 245 such products. The total has been considerably increased since that date.

But to go on with the story. On reaching California, the "Professor" started to turn out his goods on a modest scale. After he had shipped some bottles of his "cure," which consisted entirely of potassium iodide, the government secured a sample. After carefully reading the printed claims made for the article, the chief of drug control, Federal Food and Drug Administration, wrote the "Professor" to the effect that he had made claims on his labels and in literature which accompanied the nostrum in interstate trade which were entirely untruthful, unfounded and preposterous. The quack saw the point. Let me quote a few sentences from the letter he wrote to the chief of drug control. I do this for the purpose of introducing the subject of this paper; namely, the general lack of public understanding concerning the jurisdiction of federal agents under the federal Food and Drugs Act, and some of the limitations of the law itself.

Said the "Professor," commenting in part on statements he had made in his pamphlet:

> I have bin [sic] treated pretty rough by the doctors all along the line and I am getting plenty sick of it and I get from the tone of your statement that you are not very much in harmony with me and my work O.K. with me whither you are or not however I am looking at you just as I have looked at the rest of the ignorant, jealious punks that have bin trying to put me out of business all these years. Instead of trying to coporate with me and save suffering and lifes Say listen big boy pray tell me since when did you become the Big Lord of All telling me a man that has spent 40 years specialising on the cause and cure of rheumatism in all its kindred ailments and branches and prey tell me . . . how many kinds of rheumatism



From the tail end of a truck he may claim that his "bear oil" is good for anything from tuberculosis to sleeping sickness.

are they? . . . I am telling you Mr. Man rheumatism is a big word it applies to every tissue and drop of blood in our body Now I guess that takes in most of our vocabulary does it not? Then why should I worry about a few selected words to describe the wonderful workings of this life-saving blood renovator and you sit up there . . . and tell me you have anilized it and found it no good. . . .

Incidentally the chief of drug control, referred to here as a "punk" and a "big boy," is a Doctor of Medicine, a graduate of a first-rate medical school. He has had many years of hospital practice and general practice; he was an army surgeon during the World War and recently received the Order of the Purple Cross for distinguished service overseas.

The letter is typical, in style of writing and in tone, of many which come to the Administration from disgruntled "corn doctors." The "Professor" is not a member of any recognized medical society. He has never studied medicine in any organized or thorough way and is unaware of accepted medical knowledge concerning the causes of rheumatism and the means of its treatment or cure. His product was carefully analyzed and found to be worthless in the treatment of the disease.

The federal Food and Drugs Act prohibits interstate or foreign commerce in drugs or medicines that bear false and fraudulent label claims as to their power to cure or prevent disease. Precisely the same rule applies to any printed matter that goes with the goods in interstate or foreign trade. The "Professor" apparently did not understand this provision of the law. I question whether many persons do. The law prohibits curative claims regarding a disease on a label of a medicine or in circulars accompanying the article in commerce, if the product, according to the consensus of present-day medical authorities, is not valuable in the treatment of the disease. A concoction of brown sugar, water and a dash of alcohol, which would, of course, be worthless to a person who suffers from rheumatism, could be labeled modestly; the alcoholic content could be properly declared and the product given a fanciful name, and the article would "get by" in interstate commerce. But if the word "rheumatism" was printed on the label of that bottle or in a pamphlet going with it, the article would be seized by the government. A manufacturer selling such a preparation obviously would cheat the buyer of his money and would defraud him of something far more important even in these days: a reasonable chance for recovery from the disease.

Few persons understand the Food and Drug Administration's lack of jurisdiction over "outside" advertising. The federal Food and Drugs Act, as at present written, does not have any authority over statements made by medicine manufacturers or fake healers if they deliver their pronouncements in radio broadcasts, in newspaper or magazine advertisements, or on the sides of barns, billboards or automobile tire covers. Putting it more simply: Professor So-and-So puts up bottles of colored water, sells them for a dollar, "six bottles for five bucks," and, if he does not misbrand his concoction, "gets by" with it as far as the federal Food and Drugs Act is concerned. From the tail end of a truck he may claim that his "bear oil" is good for anything from tuberculosis to sleeping sickness, but the hands of government officials are completely tied if he does not mislabel his stuff and ship it interstate. Everybody knows that fake healers broadcast their wares from radio studios every day and particularly from small and obscure ones. So, if you plan to buy a "patent" or proprietary medicine, or any medical product, it is well—if you want to save yourself worry and money—to compare label statements with those which may be made in what is called collateral advertising. Then be governed accordingly. Owing to continued enforcement of the Food and Drugs Act, even in spite of its limitations, interstate trade has been materially cleared of *misbranded* proprietary remedies. Label statements on such products are today generally modest and usually truthful.

Large numbers of manufacturers of worthless medical nostrums confine their operations to a single state, sometimes to a single county. Regardless of the nature of their corn salve or bitters and regardless of the claims they make, Uncle Sam does not have jurisdiction to step in and seize the goods or to prosecute the manufacturer. If a manufacturer or an old-time or modern medical quack limits his sales and his ballyhoo to a single state, he is responsible only to officers of that state. The federal Food and Drugs Act does not grant the national govern-

ment any authority to restrict intrastate sale of foods or drugs.

I recently read with interest and dismay an article which described the tragic effects of a certain widely advertised depilatory on a young lady. The user apparently did not know that the article contained one of the most deadly poisons known, thallium acetate. According to accounts, the well known depilatory removed the hair from under her arms and also from her head. The poison later made her extremely ill. She required a long time to recover. Various reports indicated that a number of other persons had been injured by the same hair remover.

Members of the Food and Drug Administration received inquiries from interested persons asking why the government did not wield the "big stick" and remove this dangerous product from sale. The article was sold nationwide, not locally. Administration men explained patiently and repeatedly that the Food and Drugs Act defines a drug as any product that has a curative, alleviative or preventive action on disease or on the course of a disease. The normal growth of hair on the body is not a disease. The manufacturer of this depilatory did not make any curative claims for this article. He said it would remove hair, and it would. Since it was not recommended as a treatment for disease, the cosmetic could not be classed as a drug under the law, and the Federal Food and Drug Administration had no authority to take action against it. Unquestionably, there should be a federal statute to cover such products.

Another illustration of a similar nature involves a certain radioactive preparation that recently was alleged to have been the cause of the death of a prominent man in Pittsburgh. This man, active in business, social life and sports, apparently was nearing the age when he felt his powers declining. On the recommendation of a friend, he began purchasing, by the case, a certain radioactive liquid. The preparation sold for a high price, but he bought it in large quantities and drank freely. The liquid was definitely radioactive, and after a period of months the man began to suffer from various serious bodily complications, caused, undoubtedly, by the activity of the radium in the body. Radium, when used injudiciously, causes a depletion of calcium in the bones and subsequent bone decay.

A few days prior to the death of the business man and sportsman, the Federal Food and Drug Administration issued a warning to the public, calling attention to the fact that careless or injudicious use of radioactive preparations may be injurious or fatal. A similar warning had been issued months before that one. Following the death of the Pittsburgh man, a number of letters were received asking why the government had not caused the seizure of that radioactive preparation and of all others that might have similar effects. The answer is quite simple. The manufacturer of the radium preparation had not labeled it with any therapeutic assertions whatever. No printed matter containing curative claims accompanied the goods in interstate traffic. Again the government's hands were roped. But it is important to note that as early as 1926, the government officials, knowing the dangerous character of radioactive apparatus, preparations and powders, had broadcast warnings to the public against using such articles. If these products were used, the public was urged to employ them only on the recommendation of a physician and under his immediate supervision. Here again there is obvious need of a more extended federal control through legislation.

A friend of mine, a newspaper man, has a child about 3 years old of whom he is extremely proud. The other day I showed him a recent news story released by the Food and Drug Administration which warned parents to keep all medicines, including candy-coated laxatives, out of the reach of children. He agreed that there was some danger of children getting hold of medicines and of injuring themselves through drinking the contents of the bottle. But he added, "I thought these sugar-coated or candy-coated cathartics were quite harmless." I told my friend that I knew of a case in which a boy of 10 years had been killed by eating a box of a well known candy cathartic, thinking the tablets were candy. The man asked what dangerous ingredient such laxatives contain, and I told him that practically all of them contain phenolphthalein, which is known to be injurious to the tissues of the liver and which may even cause severe illness or death through overdosage. He said, "Then why doesn't the Food and Drug Administration require that such products be labeled 'poison?'"

All medicines, including candy-coated laxatives, should be kept out of the reach of children.

Before answering that question for readers of HYGEIA, I want to emphasize that these candy-coated laxatives are not poisonous in the ordinary sense. As a matter of fact, laxatives in reasonable doses have a definite and valuable use. But, in common with headache powders and many other medical preparations, they should be used with care, preferably under the attention of a physician. Instances in which persons have been made ill by laxatives practically always can be traced to overdosage, such as was the case with the 10 year old boy. Phenolphthalein, as I have indicated, may be injurious to health if it is taken in excess. The Food and Drugs Act requires a candy-coated or sugar-coated cathartic or laxative to be labeled as a medicine. But it is unlikely that the average child, reaching on the shelf and taking down the package, will read the label. Many adults do not. The child might assume from the sweet flavor and the attractive color that the tablets were candy, and he might eat the whole box. There is no necessity for labeling these tablets as poison, for the simple reason that they are not poison. Taken with discrimination and with a knowledge of their real character, they are often useful. But they, and all other medicines, should be kept out of the hands of children.

There is no provision in the federal Food and Drugs Act that requires a drug or medicine to carry on its label the word "poison." Poisons, as a matter of fact, even such virulent ones as arsenic and strychnine, serve useful purposes in the treatment of diseases, when they are prescribed in exact dosage by a physician and are used under his direction.

As far as the label on drugs and medicines is concerned, the provisions of the national pure food and drug law are largely negative. As I have said, the law makes illegal the labeling of a drug or medicine with false and fraudulent curative claims. But, with few exceptions, the law does not insist that certain information which would be highly valuable to the buyer is printed on the label. The statute requires that if alcohol is present in a medical preparation its presence and proportion must be declared on the label. The same requirement applies to a number of narcotics, including morphine, opium, heroin, cocaine, alpha or beta eucaine, as well as chloroform, cannabis indica, chloral hydrate, and acetanilid, or any derivative or preparation of these substances. When these drugs are contained in a medicine, their presence as well as their quantity or proportion must be plainly and conspicuously declared on the label.

Many persons do not understand that a drug product cannot be sold under a name recognized by the United States Pharmacopeia or National Formulary unless the article complies with the standards of strength, quality and purity laid down in these authorities. Some drug preparations are sold under professed standards of strength and purity. If the articles fall below these standards, they are considered adulterated under the law and are subject to seizure.

In twenty-seven years' enforcement of the federal Food and Drugs Act, the government has initiated legal proceedings in nearly 20,000 cases. These have included both seizure of the goods and prosecution of manufacturer or shipper. Many violations have been of an extremely serious nature, from the public health standpoint, and many persons, noting the seriousness of the offenses, have inquired why the penalties imposed by federal courts have not been heavier. For example, a large pharmaceutic manufacturing concern recently was fined $600. The fine was based on a number of counts and was imposed because the company had made a number of interstate shipments of tincture aconite, a highly important drug, which was adulterated and misbranded and which previously had been seized by the government. The drug was sold under a name recognized in the United States Pharmacopeia, but it fell below the standards of strength and quality required under the pharmacopeia. Both patient and doctor have a full right to rely on the strength, purity and quality of drugs sold. A variation may injure a patient; in some cases it may even cost him his life. Yet the company was assessed only a nominal fine.

About the same time, another pharmaceutic manufacturer was fined $100 for shipping in interstate commerce consignments of acetphenetidin and strychnine sulphate tablets which were both adulterated and misbranded. The strength and purity of the drugs fell below the professed standards of quality under which they were sold. These drugs also may be vital in the treatment of certain serious diseases, and their failure to meet the expected quality, had they been sold, might have had serious results. Yet the shipper was fined $100!

Here, again, the answer is not difficult. Section 2 of the Food and Drugs Law states that an offender shall be fined not exceeding $200 for the first offense and on conviction for each subsequent violation he shall be fined not to exceed $300 or be imprisoned not exceeding one year, or both *in the discretion of the court.* Officials of the Food and Drug Administration have long believed that these penalties, under Section 2 of the law, are entirely too light for certain types of offenders. It is hoped that within the near future the law will be amended so as to provide for substantially heavier penalties to be imposed for violations of the statute.

[NOTE.—As this article goes to press, the government is considering suggested changes in the Food and Drugs Act. HYGEIA readers will be kept informed concerning the developments.]

Guardian of the Family Health

Part I

By DORIS W. McCRAY

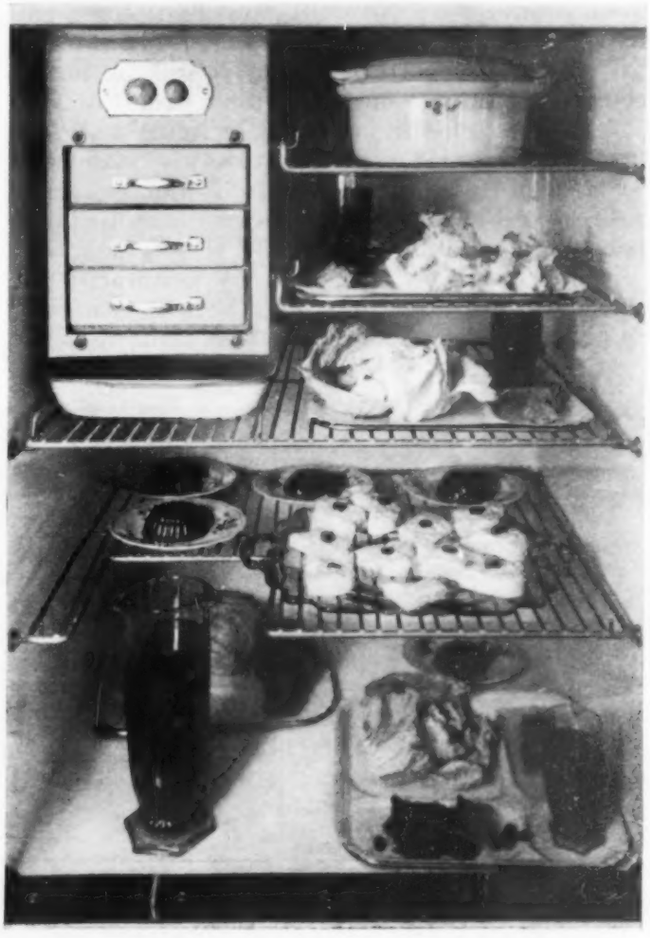
IT IS MOST DELIGHTFUL to relax in a comfortable chair in the evening to read the world's news. Conferences between nations, a favorite columnist, gruesome details of crime, happenings in Washington and queer unbelievable occurrences are all perused with equal disinterest and apathy; all are taken for granted. But one evening I was shocked out of my relaxed lounging position as I read this news item:

> **200 PERSONS IN RELIEF CENTER ARE POISONED**
>
> Oklahoma City (UP)—Nearly 200 men, women and children who ate sandwiches left over from a University club party were ill here today.
>
> Thursday night the University club held a stag party at the Ramsey country place on Lake Overholser. Seven hundred ham, beef and pork sandwiches were prepared. Almost half of them were left over. The club manager sent them to the manager of the Community camp, established by the city as a relief center for unemployed and destitute. There was joy among the children of the camp as they accepted the choice morsels. A few hours later many persons were stricken. Some collapsed and were carried to ambulances for transfer to hospitals. More than 75 were admitted to hospitals. Of this number, 15 were seriosuly ill. Attendants reported four near death today. Another hundred suffered in the shack houses of Community camp located in the North Canadian river lowlands. The city physician said that the illness was caused by sandwiches "without a doubt." Those who did not eat them were not taken ill.

The mental picture of those poor little children, eagerly grasping for sandwiches which later made them agonizingly ill, touched my sympathy. If those sandwiches had only been stored in a refrigerator! What suffering could have been averted had the "Guardian of Family Health" been used!

With proper refrigeration, cooked ham, beef and pork can be kept safely for several days. I know this from experience with my own refrigerator, which maintains its even temperature below 50 F., regardless of soaring thermometers outdoors and in the kitchen and regardless of blistering sun and sweltering hot winds across the prairies. On extremely hot days, the refrigerator works almost constantly to keep the food cool. When the doors have been shut a long time, the motor stops, and through the night it works little. I have been surprised to find, in spite of the fact that I selected a hot corner for its placement, that the operation cost is reasonable all through the sweltering days and nights and through the fall and winter.

It is interesting to note the reasons for all this danger from foods. Surely eating would be a



Guests are expected! The wise hostess prepares in advance, so that there will not be any last-minute flurries. Salad, cold meat, vegetable and a beverage are arranged on divided fiber plates which fit into metal trays. A glass tray holds fancy sandwiches, and molds of colorful gelatin are ready to be served.

hazardous performance were it not for the constant vigilance and care exercised by every person producing and handling food, lest through spoilage he lose his profits.

In the interests of the ultimate consumer, the federal, state and municipal authorities maintain a careful supervision and inspection of packing houses, dairies and wholesale and retail food concerns.

The government stamp is placed on meat in a healthy condition in packing houses. The meat is chilled immediately after the animals are killed; it is transported and stored properly refrigerated. When it enters the home, it should be given the same important care. If meats are to be kept in a safe condition, they must be stored at a temperature well below 50 F. In a good household refrigerator, the coldest shelf, which has a temperature of about 42 F., is selected for meat. In cold storage, when the meat is to be held for a longer period, the temperature is lower.

Cooking will not make good meat of spoiled meat. While boiling kills most germs, a few can resist prolonged heat. Spores of Clostridium botulinum, a rare but dangerous bacterium, can live through five and one half hours of boiling. This organism is most often found in home-canned vegetables but also may occur in sausages, from which it is named, or in meat packed in containers. It does not grow where there is oxygen. Meat that is unsafe is not rendered safe even by the higher temperatures inside a pressure cooker.

Molds and bacteria cannot ordinarily be detected until after they have been growing for thirty-six hours. There is usually nothing in the taste, smell or appearance of the food to indicate that it cannot be eaten without ill effects, although the odor may be a warning.

Milk may have good flavor and may not be soured, and it may have a bacterial count much higher than 100,000 per cubic centimeter (¼ teaspoonful), which is legal for sale in most cities. Bacteria grow with amazing rapidity in milk. A critical temperature for milk is 50 F.; but it is better if it is held at 45 F., and it will keep longer when colder. Freezing ruins milk for table use and also most fruits and vegetables. A few bacteria will grow in butter at 21 degrees below freezing, but the growth of the majority is arrested, and most disease-producing bacteria do not grow as long as they are held below 50 F.

Under favorable conditions of moisture and temperature with abundant food, bacteria double their number every twenty or thirty minutes. When a bacterium has reached full size, it divides in the middle, making two bacteria. Thus, one single bacterium can produce a million bacteria in fifteen hours!

Fruits and vegetables are spoiled by mold. The same action that causes ripening goes a step further and causes decay, unless one can arrest it by storing foods at low temperatures.

Oranges and apples have a protective skin which, when unbroken, keeps out germ-laden air and holds in the pure juice put there by Nature, rich in flavor and vitamins. Bananas are likewise packaged in Mother Nature's food factory, but they develop the best flavor if they are stored at temperatures around 70 F. They can be chilled immediately before serving, or they can be sliced into mixtures to be molded and chilled or frozen.

Among the modern scientific wonders, the housewife numbers the mechanical refrigerator, which helps to insure the health of her family and, through saving food from spoiling, to cut down her household expenses. The equipment available for refrigerator use is sanitary and practical. A wire fruit basket may be had which will assure good air circulation as well as constant cold. A set of enamel-ware containers of different sizes may be stacked one on top of the other, thus conserving space. An egg crate of aluminum has a removable, perforated shelf which holds the eggs securely. And a refrigerator thermometer provides a check-up of the temperature.

The modern refrigerator is easily cleaned, for it has rounded corners and is lined with seamless porcelain. A control regulates the freezing speed, and there is a button to pull when the refrigerator is to be defrosted. The rubber ice-cube tray permits the easy removal of the number of cubes desired. A revolving tray may be had which holds six glass quart jars with neat flat covers. A covered beverage container made of aluminum strains, or pours without straining; it may be used for all types of beverages, from milk to iced tea. A long, covered bread pan is convenient for storing any sort of food, especially that which will go directly to the oven.

Fruits, along with vegetables that are odorous, are stored on the top shelf, so that the air which goes directly to the freezing coils will be deodorized before it falls directly on the butter, cream, fresh meats, veal jelly and delicately flavored foods below. The air is warmed slightly by these foods. It rises as it becomes warmer, so that each shelf higher, at the side, is occupied by foods that need temperatures less cold. Cooked white sauce, soup and especially nitrogenous foods such as beans spoil easily; hence these are placed on a lower shelf.

Lettuce, celery, radishes, tiny scrubbed carrots to serve with hors d'oeuvres and green crisp foods keep well on one of the top shelves. These foods should be washed, drained, and stored with the water clinging to the leaves. A tight cover should be used. A bit of water may be sprinkled over the vegetables when they seem dry. This treatment will result in a wonderful, crisp freshness, even though the foods may have been a bit wilted when they were first stored! This certainly is a trick worth knowing. Always keep such foods covered and moist, but never lying in water.

Sauces, dressings, left-overs, everything that is liquid or moist, should be kept covered in the automatic refrigerator, for the atmosphere in the refrigerator is dry, and the circulating air at once carries moisture to the coils, where it is deposited as frost.

Whenever this frost becomes as thick as one-fourth inch, it acts as an insulator, like a blanket wrapped around the cake of ice, and makes the motor work harder to cool the cabinet. This frost blanket should be melted off, by pulling the plug out of the wall outlet, until the ice has dripped off into the pan below.

This is a good time to wipe off the unit and start all over again with everything clean and sweet smelling. The interior is wiped with a cloth wrung out of a pint of cold water in which a teaspoonful of borax is dissolved. An especially dirty spot is wiped off with a cloth rubbed over a cake of castile soap or fine scouring brick or powder. Nothing scratchy should be used. If one is careful never to spill, or to put into the refrigerator, jars which are sticky or dirty, cleaning the refrigerator is merely a matter of reorganizing and planning to use forgotten left-overs. The trays are emptied and are then filled with fresh water. A rubber tray inside the regular freezing tray allows one to pull the rubber tab and extract a single cube without disturbing the others.

When it is time for another check-up on the inside working of the refrigerator, a service man should look it over to be sure that everything is strong, sturdy and fit to give uninterrupted satisfaction.

For my next article, I have chosen some recipes for frozen salads and desserts which are fun to prepare and are most delectable. These dishes are full of fruits and other wholesome ingredients. It is interesting to note that a ration of dried apricots is helpful in acidosis or if included in a normal diet will materially assist in maintaining an alkaline condition. The same is true of raisins. Allies in the battle against acidosis which are included in these dishes are oranges, pineapple and grape juice. Bananas and vegetables are also wholesome. Prunes are a valuable natural laxative.

[NOTE.—Part II of this article will appear in the July issue. It will contain tempting recipes for frozen salads and desserts.]

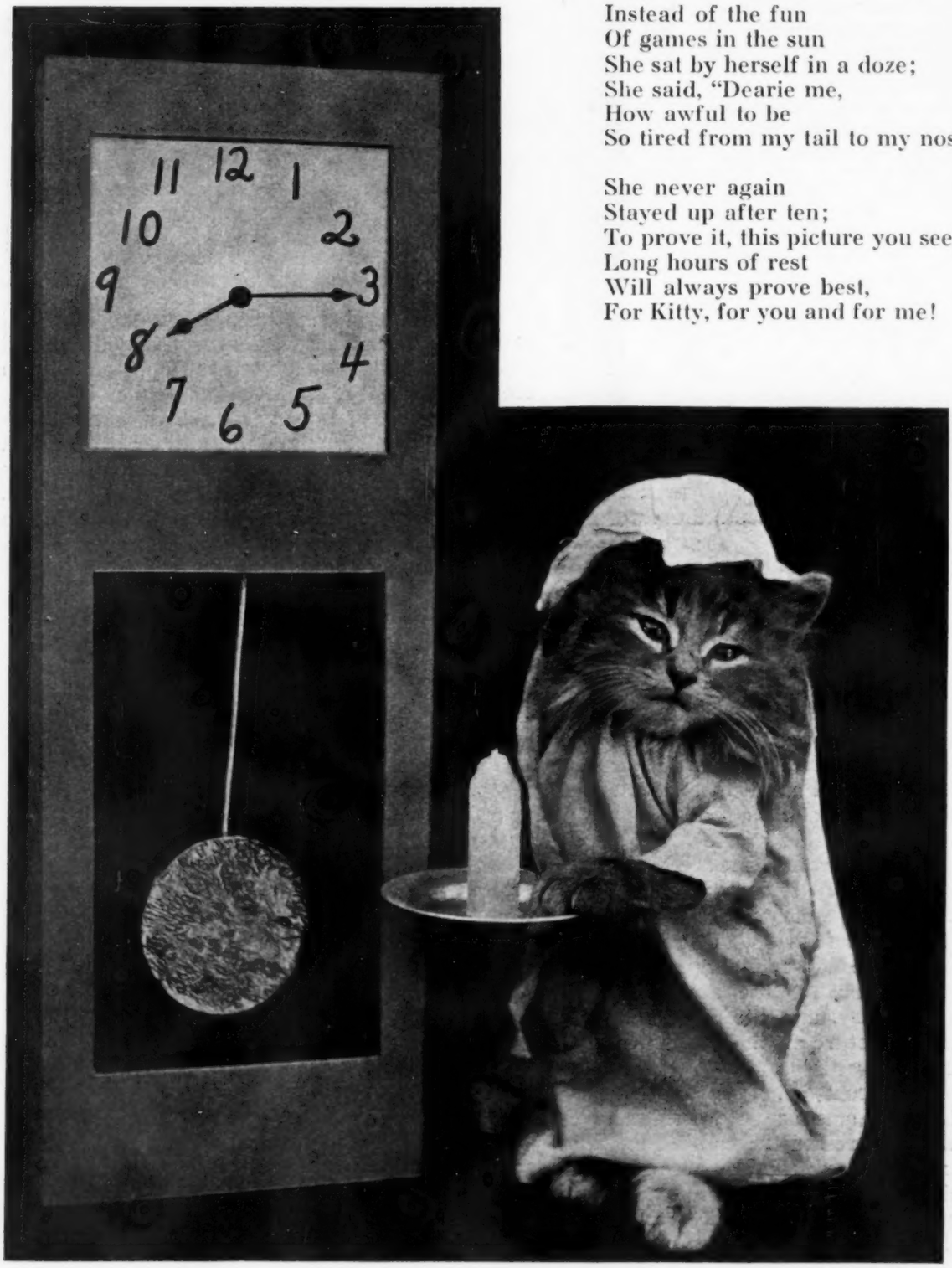
Ho, Hum, Sleepytime!

By
FRANCES G.
KLAN

This little gray kitten,
Who stayed up to listen
To a radio mystery play,
Found out to her woe
That she didn't know
Her spelling in school the next day.

Instead of the fun
Of games in the sun
She sat by herself in a doze;
She said, "Dearie me,
How awful to be
So tired from my tail to my nose!"

She never again
Stayed up after ten;
To prove it, this picture you see.
Long hours of rest
Will always prove best,
For Kitty, for you and for me!



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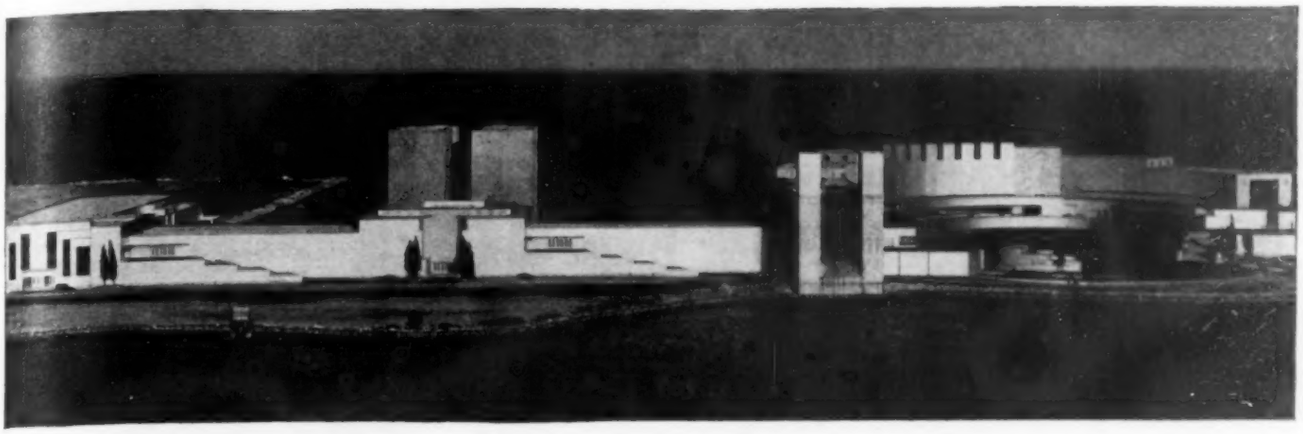

AT THE FAIR

Phenomenal is the progress of electricity, the wizardry of which will be displayed in modern architectural fantasy at A Century of Progress, Chicago's international exhibition, which will open June 1. The semicircular unit to the right in the picture above will house exhibits displaying the generation, distribution and utilization of electricity. In the center, exhibits of telephone and telegraph communication will be shown. Hanging gardens will embellish the group.

Keystone-Underwood

PAPIER MÂCHÉ VEGETABLES

Dorothy Frazier, teacher in a grammar school of Los Angeles, is shown above pointing out the merits of a squash. She has found that papier mâché reproductions of listed vegetables attract the children's attention and produce gratifying results. It's almost like make-believe.

Acme

MEMORIAL TO NURSES

The clay model shown to the left is the work of R. Tait McKenzie, done in his studio in Philadelphia. The model will be the central figure of the Delano Memorial to be erected in the garden court of the American Red Cross in memory of Jane A. Delano and 296 nurses who died in the World War.

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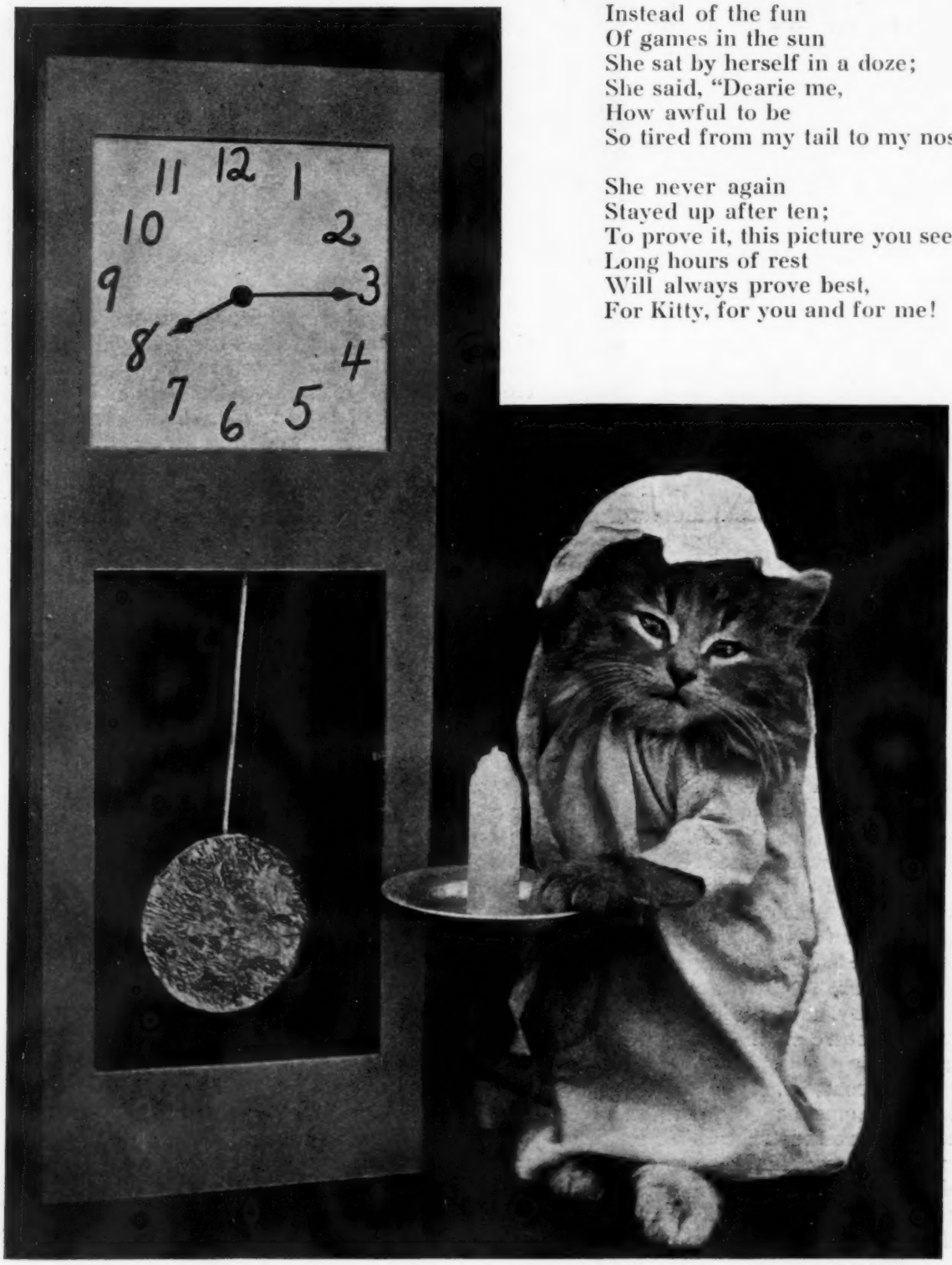

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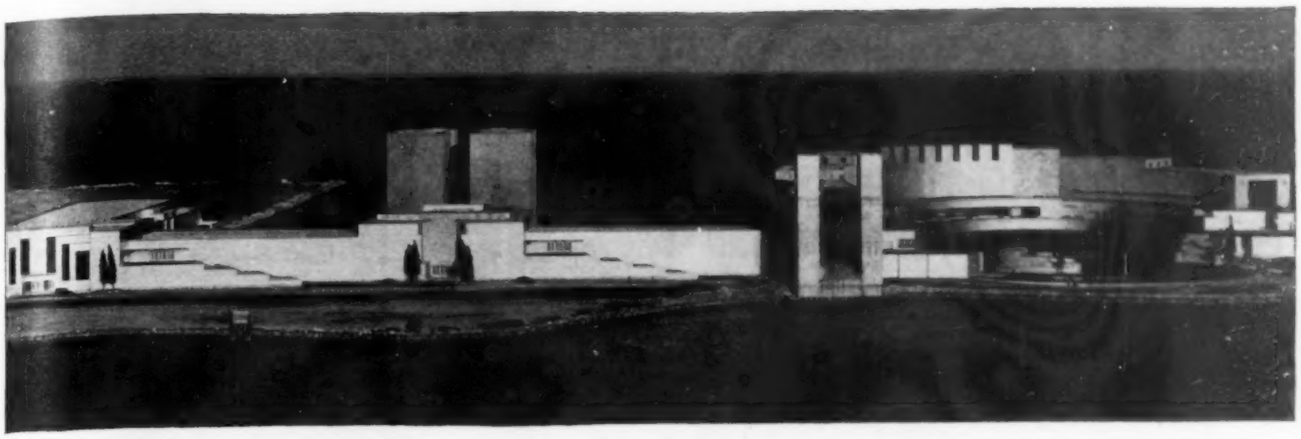

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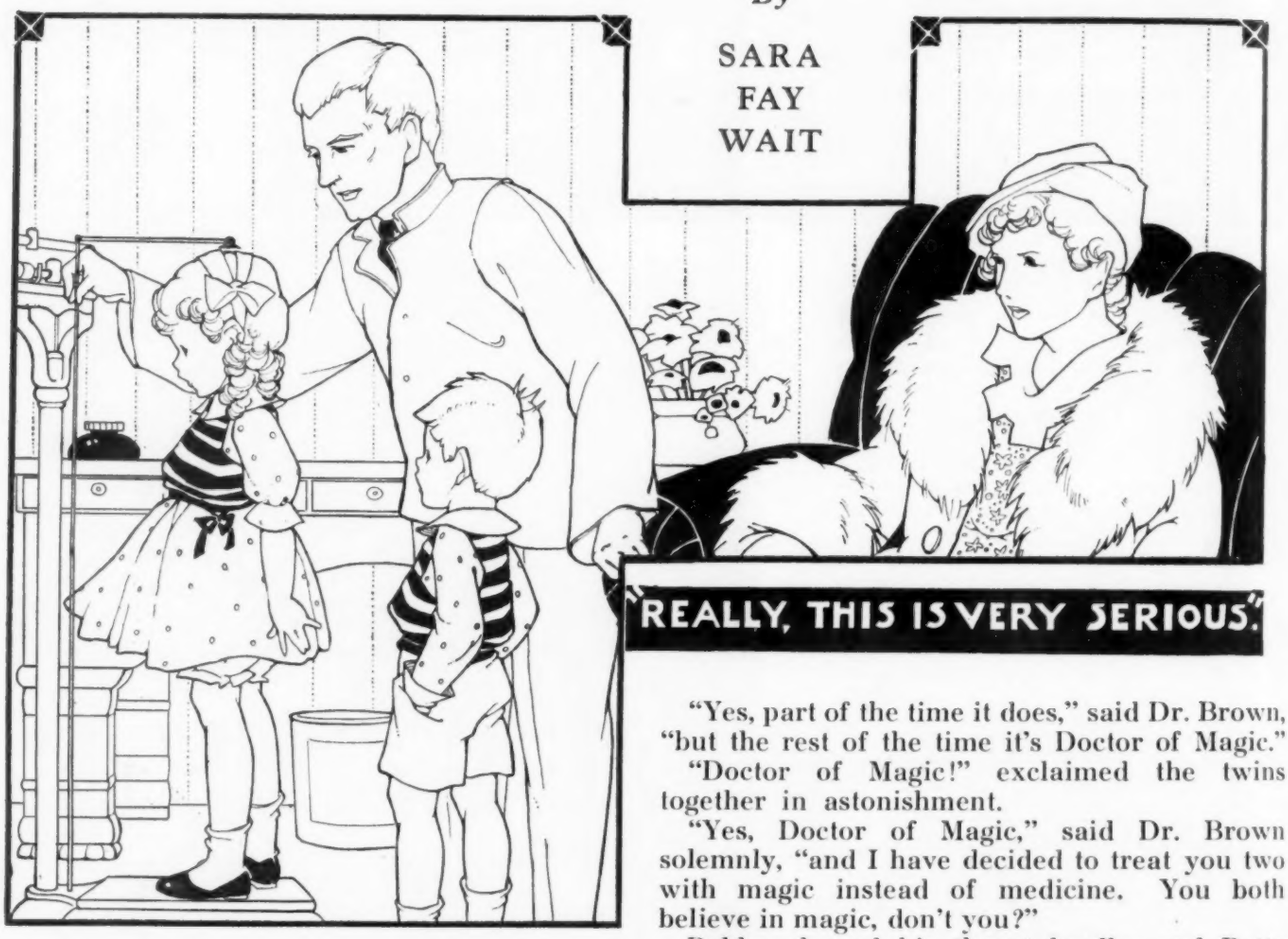
Dr. Brown, *Doctor of Magic*

By

SARA FAY WAIT



"REALLY, THIS is serious," said Dr. Brown, looking anxiously, first at Bobby and then at Betty.

What Dr. Brown meant, of course, was the peculiar way in which his scales behaved. The big hand had not gone around as far as it should when each of the twins had stood on the little platform. Dr. Brown had looked in their throats when they said "ah," had put electric lights in their ears, and telephones on their chests; but when they stood on the scales, he had been serious indeed.

So now the twins were back in the big leather arm chairs on one side of the room, with Mother and Dr. Brown on the other side.

"I wonder if either of you has ever noticed that shiny brass sign out in front of my office," he asked.

"I have," said Bobby.

"So have I," said Betty.

"Well, I wonder if either of you knows what the M.D. after my name stands for."

"Doctor of Medicine," replied Bob, and Betty was disappointed because Bob had said it first.

"Yes, part of the time it does," said Dr. Brown, "but the rest of the time it's Doctor of Magic."

"Doctor of Magic!" exclaimed the twins together in astonishment.

"Yes, Doctor of Magic," said Dr. Brown solemnly, "and I have decided to treat you two with magic instead of medicine. You both believe in magic, don't you?"

Bobby cleared his throat loudly, and Betty looked uneasy and said politely, "Why yes, I *think* we do," not wanting to hurt his feelings.

Dr. Brown threw back his head and laughed. "You *think* you do! Why, of course you do. Who ever heard of boys and girls who didn't believe in magic? Well, run along to school now. Tomorrow morning as soon as you are up and dressed, take your first dose of magic."

The next morning the twins were out of bed and dressed in no time. There was no need for Mother to remind them to hurry up this morning!

As each twin opened a bedroom door, there on the floor lay a letter, an important looking letter, in fact. Now, of course, they both wanted to open their letters immediately, but right in plain sight were clear instructions to do something else first. For this is what they read on the outside of the envelope:

"Go back to your room and
1. Open the window.
2. Turn back the covers on your bed.
3. Hang up your pajamas.

Then open this letter."

Such giggling and scrambling as they did, and in no time the tasks were done and the letters were torn open.

Each letter began:

"Presto, chango, smoliocus;
This may sound like hocus pocus,
But follow instructions, and you'll see,
That you'll be as fat as you can be."

"Stand in the middle of the living room floor and repeat this magic rhyme three times, and after each rhyme turn a somersault. Then put on coat and hat. Walk down to the front gate side by side. Then run around the block fast, going in opposite directions. Go back in the house and take off coat and hat and hang them up. Repeat magic rhyme and somersaults. Then wash for breakfast, giving special attention to backs of hands and behind the ears."

These instructions were carefully carried out to the letter.

The twins arrived at the breakfast table feeling quite mysterious. The instructions continued, "After sitting down at the breakfast table, sit very still until Mother brings a dish of hot cooked cereal. When she places it in front of you, smile (the smile is *very* important) and say 'thank you.'"

Bob remembered that yesterday morning he had looked exceedingly cross and had said, "Oh gee, I just hate breakfast food." But that was before he began practicing magic.

The instructions continued, "Repeat this rhyme to yourself as you eat your breakfast food. There should be one word in the rhyme for each bite in the dish."

The twins looked serious as they repeated, slowly, one bite for each word:

"This breakfast food is magic,
As magic as can be,
It contains a lot of vitamins,
All put in it for me."

Sure enough, each dish was empty when the magic verse was finished.

Then as they each drank a glass of milk, they read the verse:

"The dairyman waved a magic wand,
Over my bottle of milk,
And if I drink a glass each morn,
I'll be as fine as silk."

Then, strange as it may seem, Betty and Bob were still hungry, and each ate an egg and two slices of toast. Daddy said seriously, "The magic is working already."

When the twins arrived home from school that night, there was more magic to be practiced. Bob was to throw a ball up in the air ten times and catch it, while he repeated the rhyme about "One little, two little, three little Indians." Betty was to bounce her ball on the cement sidewalk, repeating:

"One, two, three, O'Leary,
Four, five, six, O'Leary,
Seven, eight, nine, O'Leary,
Ten, O'Leary, Postman."

Half an hour before supper, Mother was to call them; and after washing hands and face thoroughly, they were to read their favorite story book until supper was ready.

Numerous other instructions followed, such as picking up toys, scattering magic powder, taking baths quickly, and going to bed early.

The fun of it all was that each day's directions were a little different. Sometimes, for instance, Bob swept the front porch or Betty dusted the living room, with the windows wide open. For rainy mornings there were special instructions carried out in the basement on the trapeze that Daddy had hung from the rafters. And the day that Bob came home and said that his team had beaten the "Terrible Tigers," and all the boys had said that he was the best pitcher on the team, Dad threw up his hat and shouted, "Hurrah, now I shall always believe in magic."

And then one morning Mother took them back to see Dr. Brown, Doctor of Magic, and he didn't look serious once. He laughed right out when his scales behaved exactly as they should.

One eye squinted just a tiny bit as he said to Mother, "Sometimes magic is much better than medicine."

"SMILE AND SAY 'THANK YOU'!"

SCHOOL AND HEALTH

A Department Conducted by J. MACE ANDRESS, Ph.D.

67 Clyde Street, Newtonville, Mass.

Health Education In a New World

EVERY thoughtful student of national affairs today realizes that we are in the midst of vast confusion. This chaotic condition extends to every aspect of our government, industry and social organization. The United States has an oversupply of food, plenty of raw materials for clothing and manufactured goods; yet millions of people are out of employment and close to dire want. Machines are capable of turning out goods so much faster than they can be sold that the problems of unemployment are baffling.

Yet those who have faith believe that they can see rifts of blue sky beyond. The depression will pass. Through better political and social organizations, we shall learn how to face one of the greatest crises since the fall of the Roman empire. It seems probable that we may look forward to the dawn of a new day with confidence and hope that in many ways it may usher in a better world. Undoubtedly there will be a shorter working day. We may see ahead opportunities that are pleasant: more travel, more books, more music, more art and more opportunity for creative effort.

The field of health education is so broad, the future so hazy and prophecy so easy that one should hesitate to predict what will or ought to happen, but the trend of times would tend to justify a few generalizations. It is impossible to believe that we shall give up those things which have proved their worth and for which we have battled so valiantly, such as sanitary school buildings, school doctors and nurses, physical education, special teachers of health, and instruction in personal and community hygiene. Health will not be counted as a fad even if some persons would have us return to the three R's, which after all do not represent the fundamentals of education but the tools for acquiring education. It is safe to say that the present tendency to curtail school health activities will be only temporary.

In the future it is quite evident that the problem of leisure time will absorb much of the thought and energies of the school. This was not true in the early days of the Republic. Then there was always enough work. Land could be cleared, houses built, crops grown, wool spun, cloth woven, and the huge fireplaces filled to keep the cabins warm. Work of the right kind under wholesome conditions is healthful. Its hygienic and therapeutic value is well known in the cure of the mentally disordered. Wherever occupational therapy has been employed in ordinary hospitals, it has proved its worth. For normal men and women the day's work has been a consolation, an anchor of safety for the individual in times of stress and in all the varied conditions of life.

Healthful and refined recreational interests and skills so necessary for healthful living must take up much of the time devoted to work. In this the school is needed as a teacher and guide. In spite of the increasing interest given to recreation in our modern schools, much remains to be accomplished.

It must be admitted that this is a community problem as well. Children need to continue their play and sport activities such as tennis, baseball and hiking in such a way that they become integral parts of their life. There will also be need of intellectual and emotional guidance. At this point the schools have frequently failed dismally in the past. Too often children have studied history, literature, music, science and drawing, only to have such an antagonism toward them that they did not have any inclination to pursue them further for purposes of recreation. The better we understand children and the problems of mental hygiene, the clearer it is that the permanent interests which children acquire, their attitudes and their emotional expression are of great importance. Prof. Edgar G. Johnson of the University High School, Ann Arbor, Mich., recently summed the matter up neatly by saying: "What a school does *for* a pupil intellectually is in all probability infinitely less important than what it does *to* him emotionally."

As time goes on, we shall be less concerned about how many blocks of information a pupil may master and more certain that whatever he seeks to learn is adapted to his capacities, that he derives from it satisfaction, builds up wholesome interests and is led to feel that his life is significant and well worth living. Home and school will work together for the development of hobbies. Many of these will grow out of the work of the school, such as gardening and nature study, and an interest in travel, poetry, music, use of tools, art, dramatics and good books.

In this broader kind of health education which encompasses the activities of the entire school there must be a reorganization of aims, values and methods of teaching. The new school will revolve around a social core. There will be training in the cultivation of social relationships since these are so fundamental for the welfare of the individual. The new school will be intent on insuring for each individual the reserves of wholesome interests and skills that will aid him to adjust himself to a new world in which leisure is to play such an important part.

TEACHING HEALTH

(In this column will be published each month concrete examples of good health teaching. Teachers are invited to send in contributions not exceeding 600 words and preferably less to the editor of this department. Illustrations of the actual work of children will be welcomed. Contributions accepted will be paid for but no manuscripts will be returned.)

AN ACTIVITY PROGRAM WHICH CULMINATED IN A MANICURE PARLOR

AN ORIGINAL health activity program has been carried out in an elementary school of Fullerton, Calif. The teacher had a group of Mexican children in the first grade. She selected the late winter and early spring to give the program a trial. This made it much more difficult, for these children have a peculiar belief that they must not wash in the winter, especially if they have colds.

Pictures of beautiful hands were collected from magazines and other sources ready for their study. After the teacher had created the atmosphere for her activity program, she

had a hand inspection one morning. All those who had dirty hands were sent to wash them. Before dismissal that evening two fingers were held up to remind them that they were to wash their hands and brush their teeth before coming to school the next morning. (They had had a clean tooth campaign in the fall.) In a few days another finger indicating a clean face was held up at the end of each day.

One morning a child came with her hair beautifully shampooed and curled. The teacher immediately grasped the opportunity, and after a simple talk a fourth finger went up at the end of the day. The city school nurse visited the room and was surprised and pleased to see the clean hands, face, teeth and hair.

After several weeks of cleanliness talks and good health talks, the teacher fearfully but boldly held up the fifth finger one Friday night, saying, "Everybody a bath this week end." On Monday morning, accounts were taken and several had had the baths. Each Monday more and more were added to the list of bathers. Later in the spring a bath on Wednesday evening was added to the list. Then a week or two before school closed, she told them they would need a bath every day during the summer.

While all this home program was going on, she was also carrying on a schoolroom activity following up the clean hands. There were talks on the hands, the skin and nails with the care of each. The children dictated sentences to be written on the board and copied in a book for their language work.

After a visit to the manicure parlor where she herself received an especially good manicure, she suggested that they "fix theirs" too. She then produced the necessary bowl, scissors, file, emery boards, orange sticks and buffer. Then she gave one child a manicure, giving instructions as she worked, while another looked on. These in turn gave manicures to others and demonstrated to another "apprentice" how it should be done. Every one in the room had the opportunity to do another's fingers as well as to have his own done for him.

The lessons were carried home, for one of the little girls came to school one morning and held up her little hands, saying, "See! Pete he deed my finners." And from the dirtiest family too! It was, indeed, a victory.

The school nurse had long before ceased her inspection of heads, and the need for treatment of sores of various kinds had entirely disappeared.

Edith M. Culter,
Orange, Calif.

PROMOTING THE USE OF MILK IN RURAL SCHOOLS

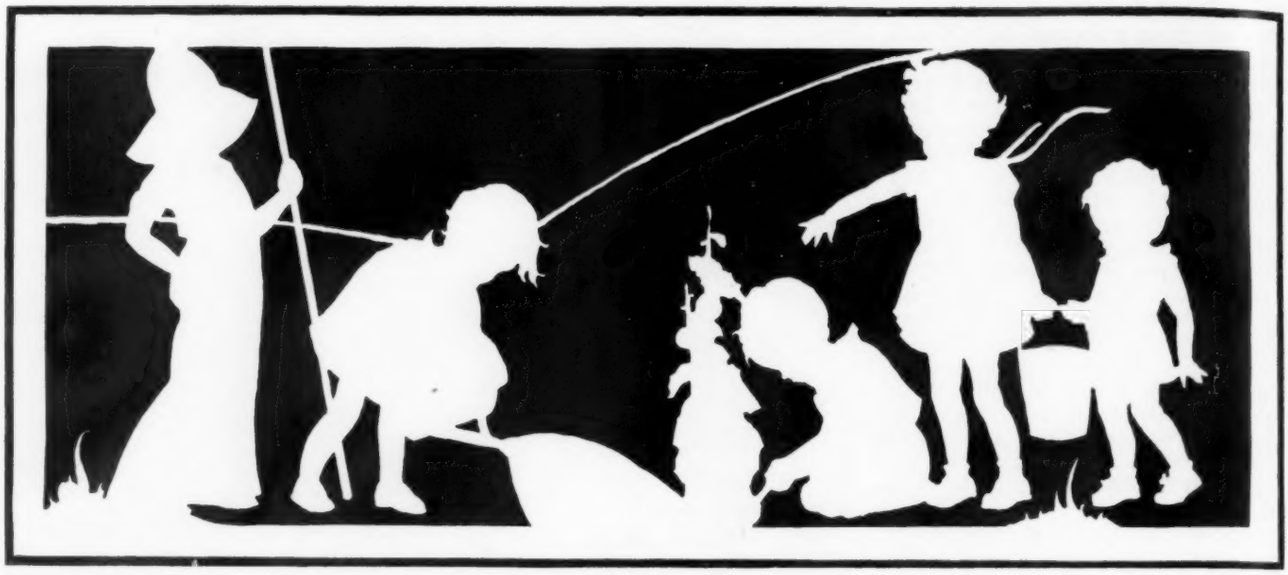
LAST SPRING a unique health contest was conducted by the Children's Fund of Michigan among the rural schools in the district it serves. The schools competed, not against each other but against themselves. Each made a survey to discover its weak points; the school then laid plans to remedy them so that the health of the entire school might be improved. Diaries were kept as these plans were being carried out; and at the close of the contest the judges made their awards to the schools that had accomplished the most in improving their own conditions.

In many schools the physical examinations of students revealed poor teeth and the intake of milk in insufficient amounts. Many children who were underweight were in need of more food. Some of these children had to get up early in the morning and walk a long way to school; and the food in the dinner pail was insufficient both in quantity and in quality to meet their physical needs. It was agreed that a hot dish to supplement this lunch would help balance the menus; and if the chief ingredient in it was milk, it would be even more beneficial.

Almost invariably when the teacher talked over this need of more food with the parents, some plan was evolved whereby a hot dish was added to the school lunch. Methods varied according to the resources of the community. In one school, for instance, each child brought with his lunch each day a spoon and a small jar of food to be warmed for him before noon. One mother donated a wash boiler and rack which she used for summer canning. At recess the rack is put into the boiler, four quarts of water are added, the fruit jars with loosened tops are placed on the rack, and the cover is put on the boiler. By noon the jars of food setting in the hot water are thoroughly heated. After the pupils have washed their hands and covered their desks with clean paper towels, the hot jars are distributed to their owners, and all eat lunch together.

One school that lacked a stove suitable for this purpose was given an old two-burner oil stove which the boys reconditioned. In another school, jars of food are reheated over the hot air register. But regardless of the manner of heating, the plan has been generally considered quite beneficial wherever it has been tried. For among the foods that reheat best are those that contain milk, and they are generally enjoyed because they furnish moisture which is too often lacking in the usual school lunch box.

All kinds of creamed vegetables are popular for this purpose; creamed eggs, creamed salmon, macaroni and cheese, creamed rice pudding and tapioca cream pudding are other suggestions for foods made with milk. Often a mother can fill jars for one or two days ahead from appropriate dishes prepared for the home table, but



there are times when she likes to be reminded of something especially good for supplementing the school lunch. So about twice a week one teacher writes on the board a recipe to be taken home to mother. This serves also as copy for writing lessons as well as directions for the girls in the domestic science class. The recipe so often calls for milk in its composition that mothers are now using more milk in their cooking than ever before, and the children in this school are getting milk fillings in their sandwiches and delicious milk dishes in their jars.

In other communities, hot vegetable soup, cream soup or cocoa is made daily by the domestic science class and served to all who lunch at school. In some schools, materials are donated by parents; in others, deficits are met by townspeople or by the Parent-Teacher Association. In some schools, pupils buy meal tickets at 2 or 3 cents apiece, in cash or work, as a means of fostering self dependence and respect. Materials that can be furnished by students are bought from them at the following prices: 9 cents a quart for milk; 1 cent a pound for potatoes, turnips and carrots; 3 cents a pound for cabbage; 5 cents a pound for onions, and 15 cents a quart for canned tomatoes. Students who cook well and give good care to the kitchen are paid for extra work. Fifteen minutes' work pays for a lunch.

Another school reported that pupils were encouraged to drink milk by various contests. In the second grade, only 11 per cent of the children drank milk before the contest; afterward, 73 per cent drank milk. The third and fourth grades held contests headed by three captains. On the board were placed the names of pupils in each group, and each day a star was pasted after the name of each one who drank milk with his lunch. "Before the contest, only one child brought milk to school regularly," reported one captain; "after the contest ten did." The fifth and sixth grades made a rule that each pupil must drink at least two glasses of milk daily. Their increase from 74 to 94 per cent was quite gratifying. The message was also carried into the home by charts made by the pupils for keeping track of the number of glasses of milk they drank there and of the amount of fruits and vegetables they ate. And with them went a letter to the mother asking her assistance in "keeping us more healthful by seeing that ——— keeps his own chart each day."

In another community, teachers had never been able to get the children out of the habit of drinking black coffee. Many times they had explained the harm it would do them, but without success. As the pupils were weighed, those who did not gain were told to drink more milk, eat more fruits and vegetables, and get more sleep and exercise, but without effect. Then one day milk was suggested as a substitute for the coffee in their lunch. The reply was that they did not like milk. However, at the suggestion of cocoa, their faces wreathed with smiles. Next day there were a few bottles of cocoa instead of black coffee.

The teachers then decided on a study of the teeth, from which the pupils deducted the fact that nobody was hurt but themselves when they allowed their teeth to decay. The next step was the study of milk as a bone and tooth builder. On the next day a few bottles of milk appeared. The teachers were prepared. They commended highly each milk drinker and gave him straws for its consumption. There followed a steadily increasing demand on their praise and the straw box until the end of the contest, when it was reported that "nearly every boy and girl drinks either cocoa or milk."

BERTHA STREETER,
Detroit.

CHARTING THE CHILD'S HEALTH

IN MOST schoolrooms, every day is a health day, every week a health week. Even so, it behooves every one to take stock now and then to determine just what is being accomplished by the health measures that have been instituted. Such an inventory points the way toward more intelligent effort.

The problem is, What type of program can be devised and carried forward which at once will be sufficiently detailed and inclusive to put the issue squarely up to parents? How may teachers both check and stimulate definite, cooperative health endeavor in which parents, children and the school can work together in efficient understanding?

One answer to the problem was found in the Rocky Ford schools in the making of an individual health survey. The various schools in the system each handled the survey in a way suited to its own needs. The suggestions for charts and procedures given in this article were used in the Lincoln School.

American Education Week was selected as the time for considering this problem with our patrons, thus making a concrete study of health the big topic for that week. The value of the project indicates that any week might well be devoted to this purpose, although Child Health Week is especially appropriate.

In preparation for this week, the principal arranged a form for a room chart from the data turned in

by the school nurse after she and the school doctor had made a careful examination of every pupil. Every teacher, then, filled in this form for her own room. Reading from left to right across the top of the chart were the following headings: smallpox vaccination; toxin-antitoxin; defective eyes; eye defect attended to; wax in ears; heart defect; tuberculosis; tuberculosis contact; other lung disease; skin disease; defective teeth; teeth need cleaning; enlarged tonsils; underweight or overweight; defective spine; posture; enlarged thyroid; orthopedic trouble; practice of health habits. A list of pupils in each grade was entered on the chart, reading downward. Negative and positive answers were indicated by zeros and check marks, respectively.

In addition to the chart, the teacher wrote out specific comments as to every pupil's health habits or behavior; for instance:

(*a*) Cries easily.

(*b*) Goes to toilet too often.

(*c*) Comes to school without handkerchief.

(*d*) Most commendable.

(*e*) Poor muscular coordination.

From a combined study of all the charts from all the rooms, the principal then worked out a summary chart for the school.

This chart listed the grades from left to right at the top of the page. Reading downward under the first major heading, Preventive and Remedial Measures, the following items were listed: (1) vaccinated against smallpox; (2) had toxin-antitoxin; (3) had tonsils and adenoids removed; (4) glasses, when needed; (5) practice health habits O.K. Under the second heading, Physical Defects, the following items appeared: (1) defective teeth, (2) teeth need cleaning, (3) enlarged tonsils, (4) defective eyes, (5) wax in ears, (6) defective heart, (7) tuberculosis, (8) tuberculosis contact, (9) other lung diseases, (10) skin disease, (11) underweight, 9 per cent or more, (12) overweight, 20 per cent or more, (13) defective spine, (14) defective posture, (15) enlarged thyroid, (16) orthopedic trouble.

When the blanks were filled in, the principal informed the school that certain weak spots were indicated, such as wax in ears, defective teeth, need of cleaning the teeth, underweight and practice of health habits.

Copies of this chart were sent to the homes with the request that every parent study the chart and if possible come to the meeting scheduled for a discussion of the facts set forth.

All during this special week the chart material was used by both teacher and principal in private conferences with individual children where this was considered advisable. Also, the hygiene work of the classroom was based on the needs disclosed, especial effort being made to make this work graphic and vitally interesting.

With the chart and the awakened pupils to serve as "home missionaries," the parents felt and responded to the challenge in a surprisingly gratifying way. The attendance at the meeting was exceptional, and interest was keen.

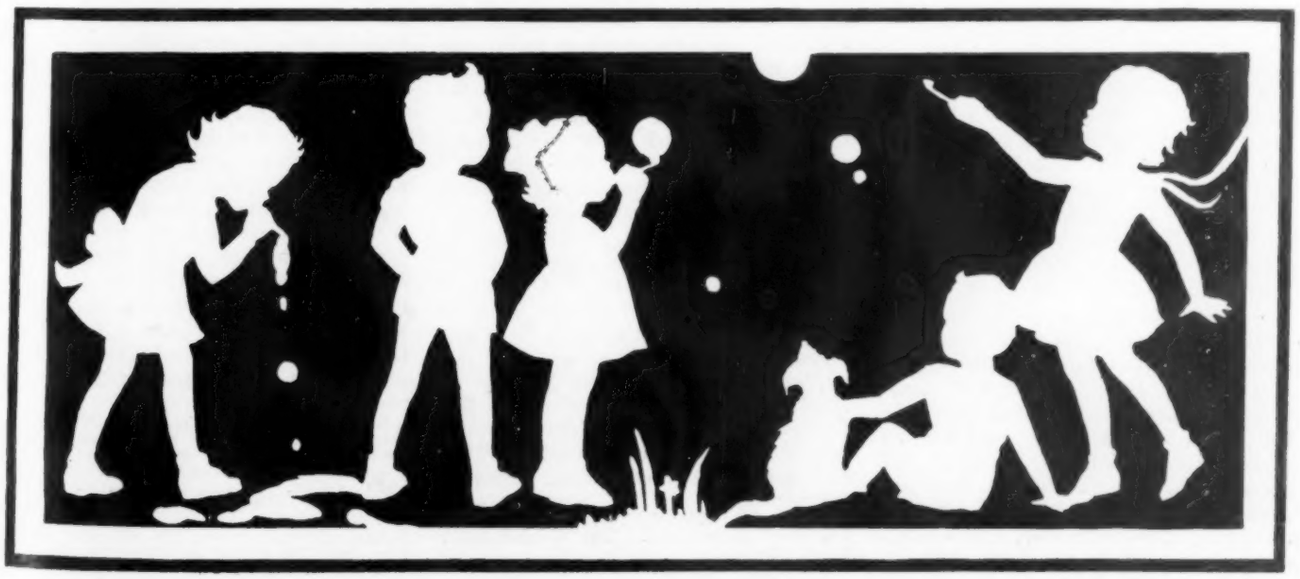
The first part of the afternoon session was spent in general meeting. Here, with a copy of the school chart in the hands of every one present, a general study was made. The main points of the school health program were set forth. The chart was interpreted to the patrons, differentiating among the responsibilities of the home, the school, the teacher and the child, and stressing the need of intelligent, whole-hearted cooperation on the part of all. Emphasis was given to "our weak spots."

The discussion that followed was detailed and searching. The meeting became an open forum, a clearing house of questions and ideas. It was good to note how many parents already had been aroused to a consideration of certain glands, of the part played in life by posture, and various other items indicated on the chart.

Those patrons who felt the need of doing so were asked to go then to the rooms in which they had children. There the room chart and personal data were studied by the parent and teacher together. Every parent was given an opportunity to become informed as to the detailed check on his or her own child.

Many parents came back to the principal to discuss further the case of their children. Many parents came back to the school some other day during the week to check their children's records more carefully, perhaps to note each point, or to visit a hygiene class. Many parents who were not in attendance at that afternoon meeting, hearing details of the work from some parent who was there, came later for a check on their children. We have reason to believe that in other homes from which no personal response was forthcoming these observations were the topic of much discussion.

No effort was made to tabulate the immediate results of this week's emphasis on health in terms of corrections made or in any other objective way. We were not trying to make a "record." But we were gratified at the response with which our effort was met. Children were taken to family physicians for examinations. Corrections were made. A tremendous impetus was given the observance and practice of health habits. Emphatically a more sincere, better informed attitude toward health prevailed among children, teachers and parents, and



a more cordial, competent cooperation was evidenced throughout the session.

BLANCHE B. MCFARLAND,
Rocky Ford, Colo.

THE JOURNEY OF MILK

WHILE MAKING a study of foods as part of the class work in social studies, my third-grade pupils became especially interested in milk and decided that they would like to trace the journey of milk.

They listed the following ways of obtaining information: (1) excursions, (2) research reading, (3) pictures, (4) stereopticon slides and (5) consultation of persons who know more about the subject.

The class was divided into three groups: one to study milk on the farm; another, milk at the dairy; and the third, the uses and products of milk. The first group visited a dairy farm and the second a modern city dairy. Before these excursions were taken, the class listed questions which they would like to have answered, and the groups answered these questions when they returned. They gave oral and written reports and made illustrations of the things they saw. They were greatly impressed by the precautions taken to insure pure milk. The third group made a study of the value of milk, its many uses in the home, and its products —butter and cheese. They found pictures illustrating these topics and made posters, charts and booklets. They planned nourishing meals containing milk in many forms.

A class book, "The Journey of Milk," was made, and each group contributed its share of information to it. Whenever questions which could not be answered arose during discussion periods, they were written on a chart and were later answered by the group studying that phase of the work.

On one occasion a group of children prepared and presented to the class a stereopticon lecture about milk. Several story hour periods were devoted to the reading of stories about milk.

While this unit of work was being carried on, the children constructed a model dairy farm, a dairy and the city homes in which the milk consumers lived, so that the entire journey of milk could be seen at a glance. The buildings were made from cardboard packing boxes and then painted, while the trees, fences, roads and homes were made from heavy construction paper. The background for the project was done in colored chalk on heavy brown paper. The children attempted to show the proper background for each section of their project: a country scene, a suburban scene and a scene in the residential section of the city.

The outcomes of the unit were many. An excellent spirit of cooperation, courtesy, a sense of responsibility and an appreciation of the interdependence of city and country were developed. Initiative was developed by trying different methods of making trees, fences and buildings from the materials at hand. The children became more proficient in independent research work and in organizing material. They learned the value of milk and various ways of including milk in the daily diet.

LOIS L. WHITNEY,
Hartford, Conn.

NEW HEALTH BOOKS AND TEACHERS' MATERIALS

THE COMMITTEE on Administrative Practice of the American Public Health Association sponsors "Community Health Organizations," [1] dealing with a plan of public health organization resulting from twelve years of experience. It is intended as an administrative handbook for the public health officer and his staff and for interested laymen. It shows how a health department should be organized to meet reasonable standards of service. The committee had a community of 100,000 population in mind, but the plan can be easily adjusted to cities of other sizes. It embodies the best modern thinking in regard to the organization, program and methods of the urban health department and its relation to other social agencies.

Although intended primarily for the public health officer, it should be a valuable book of reference for teachers and students of health in high schools, normal schools and colleges. Its value as a reference book might be seen easily in considering a topic like milk and food control. Chapter XII is devoted to this subject and tells the reader about the standards desirable for safe and efficient health administration.

MERIDEN, CONN., a city of about 40,000, invited the department of public health at Yale to undertake a health survey of the community. This offer was accepted, and "A Health Survey of Meriden, Connecticut" [2] gives the reader an excellent idea of the health problems of a city of this size and points out what remains to be done. The graphs show that the city has made great progress in the control of disease although the report states that between 700 and 800 people are incapacitated every day, a large proportion being sick in bed. This report would be excellent reference material for a class in advanced community hygiene. Such classes should be brought in contact with actual facts relating to community health.

THERE IS no formal stamp of health in *Spyglass*,[3] a new and attractive magazine for children; yet it is obvious to the adult reader that it is a health magazine in which mental and physical welfare is considered a natural part of life. Every article is brief and well written and contains interesting and practical information. Each page is well illustrated. There are questions scattered all through the magazine which will naturally tend to stimulate children to think and do. Classroom teachers will find material for many health lessons in the *Spyglass*. The editors are to be congratulated for the intelligent and painstaking work which is evident throughout this unusual magazine.

IN THE UNFORTUNATE economic crisis that we are now facing, the problem of providing sufficient nutritious food for families with a dwindling income is one of the major health problems that hygienists are called on to help solve. To what extent may education be of real service? This was the problem set by two able nutrition experts of the New York Association for Improving the Condition of the Poor. "The Influence of Education on the Food Habits of Some New York Families," [4] the report of their investigation, is compared with a similar one made in 1914. In 1914, the most common errors in the diets of families uninfluenced by health workers were too much meat and fish and too little milk, fruit and vegetables. The excellent charts in this pamphlet show that in the intervening years there has been improvement, that money for food has been spent more intelligently. The figures show that the best diets are found in those families with the largest incomes. As the diet and living conditions improve there is also a definite improvement in health. Health workers and teachers will read with satisfaction that those families influenced by nutrition workers showed distinct improvement in diet selection.

1. Edited by Hiscock, Ira V. Price, $2.50. Pp. 261. New York: The Commonwealth Fund, 1932.
2. Pp. 60. City of Meriden, Conn., 1931.
3. Published quarterly by the American Child Health Association, 450 Seventh Ave., New York City. Anne Whitney, Director of Educational Service. Marian Lerrigo McWilliams, Ph.D., Editor. Subscription, 75 cents a year; single copies, 20 cents.
4. By Gillet, L. H., and Rice, Penelope Burtis. Price, 35 cents. Pp. 48. New York: New York Association for Improving the Condition of the Poor, 1931.

NEW BOOKS ON HEALTH

SEX EDUCATION PAMPHLETS

THE STORY OF LIFE
(For boys and girls ten years of age)

IN TRAINING
(For boys of high school age)

HOW LIFE GOES ON
(For girls of high school age)

THE AGE OF ROMANCE
(For young men and women)

THE VENEREAL DISEASES
(For both sexes, high school age or older)

By THURMAN B. RICE, M.D.

Price, 25 cents each; set of 5, $1

AMERICAN MEDICAL ASSOCIATION
CHICAGO, 1933

THESE PAMPHLETS replace an older series published by the American Medical Association. The choice of Dr. Rice to write these pamphlets was a happy one. He is especially well qualified to do just this sort of thing. As a physician and biologist he has the scientific background; as a popular writer on health and as a teacher, he is able to interpret these subjects for laymen; as the father of a girl, and of four fine boys to whom he refers as "Indiana's backfield in 1950," he understands children from a practical as well as from a theoretical standpoint. Dr. Rice has had the courage to face the fact that modern young people will no longer be satisfied with sophistry when it comes to learning about the processes of procreation. At the same time, he has not departed from the fundamental principle that civilization is founded on the home. He has taken the sound position that sex is so deeply interwoven with the mental, moral and spiritual life as well as with the physical life that there can be no ignoring or isolating it. He has expressed this sound conviction in every pamphlet from the one for little children to the ones for adults. It is in logical consequence of this point of view that he writes about sex for little children of both sexes in one pamphlet and employs the same technic in speaking to adults.

"Sex," he says, "is a unit." He holds that neither man nor woman can understand his or her own sexual life and problems without understanding those of the other sex as well. Even in the pamphlets for the high school ages, though he addresses boys and girls separately and stresses different ideals for each sex, he teaches the same fundamental lessons to the two groups and gives each a glimpse into the physiology and psychology of the other sex.

These pamphlets will not appeal to those who adhere to the theory that children should be kept in what used to be called innocence, and who delude themselves into thinking that they can wait until adolescence comes on the growing youth before giving enlightenment on the subject of sex. Neither will they appeal to the advocates of the so-called advanced school of thought, which would throw away the institutions of marriage and the home. For the great and growing class of enlightened parents who realize the need for proper sex teaching and are at a loss how to go about it, these pamphlets offer a help which is abreast of the times without at the same time being ultramodern.

There are no descriptions or diagrams of sex organs in these pamphlets, except such references to physiology as are needed for the discussion. The pamphlets are not medical treatises but intensely human and practical documents which display a real grasp of the needs in this field of health education.

The pamphlets should be used as a supplement to the confidential personal teaching by which knowledge of sex should be transmitted by parents to their children. They should be read by parents first and then turned over to the children according to age. Teachers will also find the set useful for their own information and for the occasional instance in which lack of responsibility in the home may force the teacher to assume a function which under normal circumstances should be left to the home. Doctors will find the set useful to recommend to parents seeking just this sort of information. At the nominal prices, singly or in sets, these pamphlets should meet a pressing need in a constructive manner.

The pamphlets are attractively and substantially printed. The cover designs and illustrations are photographs which express the spirit of each pamphlet, as indicated in the titles.

W. W. BAUER, M.D.

YOUR HEARING: HOW TO PRESERVE AND AID IT

By Wendell C. Phillips and Hugh Grant Rowell. Price, $2. Pp., 232. New York: D. Appleton and Company, 1932.

THE VARIOUS services to be rendered to those who are partially deaf or hard of hearing are considered in this book. The authors point out that these individuals constitute a distinct group to which little attention has been paid until the last few years. This field has been covered by the American Federation of Organizations for the Hard of Hearing and its local units. Attention is called to the fact that the distinction should be drawn between the truly deaf and this class of individuals as they differ materially in terms of impairment and their educational and social needs.

The book has been written with an ideal of prevention and correct diagnosis and treatment. The care of the deaf is cited as a problem apart from the care of the deafened. The point is made that individuals in the deaf class lack the fundamental experience in life which they never are able to enjoy. Persons in the group with partial hearing can be returned to the normal with proper supervision. The book starts with a fundamental discussion of the hearing apparatus, the mechanism of hearing and the methods by which hearing is tested. Diseases of the ear are next considered, and a discussion follows as to what the physician and the individual can do for impaired hearing. The remaining portion of the book is concerned with the education of the person who is hard of hearing; it includes an excellent discussion on lip reading. Economic and social adjustments of this group are discussed in detail. In concluding the text the authors extend a word of warning to the deafened for the avoidance of fake deafness cures.

This is a highly commendable book from the standpoints both of purpose and of exposition. Here is an authoritative source of information for the layman and any one interested in preventive medicine; this includes, of course, the physician and especially the otologist.

H. G. PONCHER, M.D.

QUESTIONS AND ANSWERS

Nephritis

To the Editor:—What is the general stand at present in regard to the possibility of curing an acute and chronic case of nephritis? Is there any specific place where cures of this disease have been effected? Are there any physicians who have made a particular study of nephritis?

J. D. B., Indiana.

Answer.—In discussing the possibility of curing acute and chronic nephritis, it is necessary to consider the two conditions separately.

Acute nephritis occurs as a separate disease entity or as a complication of certain diseases, especially scarlet fever and diphtheria. There is a limited amount of inflammation of the kidney present in most if not in all febrile conditions. Acute nephritis may also follow exposure to extreme cold or may be a complication of tonsillitis and certain types of severe throat infection known as septic sore throat. It may also be due to acute poisoning, especially from metals such as mercury or lead. Many cases of acute nephritis progress to a recovery, which, from the standpoint of clinical condition and future health, is complete, though there may be some anatomic damage to the kidney structure. Fortunately a person can get along with approximately 40 per cent of the kidney capacity with which he is provided.

Chronic nephritis may be the sequel to acute nephritis, or it may be the result of gradual development over a period of years of kidney impairment caused by infectious foci in the teeth, tonsils, ears, sinuses, gallbladder, joints, appendix or sex organs. It may also be due to disease of the circulatory system and may follow chronic poisoning, particularly from metallic substances such as lead, mercury or arsenic. The use of alcohol over long periods may predispose to nephritis.

Chronic nephritis caused by structural changes is not curable. The treatment depends on minimizing further injury to the kidney and enabling the patient to make the best of the impaired condition of his health.

Treatment of chronic nephritis is based on the removal of the cause when this can be ascertained and adapting diet and hygiene of life to the reduced capabilities. Chilling and infections of all kinds are especially to be avoided by those who suffer from nephritis.

Any physician who takes a special interest in internal medicine should be able to give adequate treatment in a case of nephritis. Any good hospital should be a satisfactory place for treatment. Many patients and some physicians are impressed with the progress which patients with nephritis make at so-called spas. The family doctor, however, is the best adviser.

Bone Displacements

To the Editor:—A number of cases diagnosed by osteopaths and a physician as dislocated hip or pelvic bones or joints come to my attention. With one or more treatments the patient recovers. However, in due time these adjustments or treatments have to be repeated, as the old ailment returns. To what extent do these bone displacements cause symptoms or disease? Is it common for people to have one leg shorter than the other and not know it?

E. W., Iowa.

Answer.—The idea that hip bones or pelvic bones are readily displaced or dislocated and as readily replaced by a skilful thrust, a so-called adjustment, is entirely erroneous. Displacements, or dislocations, of course do occur but only as a result of gross violence associated with severe symptoms and often shock, so that the patients are immediately and completely disabled, necessitating their removal to a hospital where reduction is accomplished under an anesthetic. A prolonged period of convalescence usually follows, and often there is some permanent disability.

Inequality of length of legs is not infrequently encountered, but the difference is rarely more than ¼ inch. Such a condition does not attract the patient's attention since the slight irregularity is unconsciously accommodated by a slight tilting of the pelvis.

If you have a question relating to health, write to "Questions and Answers," HYGEIA, enclosing a three-cent stamp. Questions are submitted to recognized authorities in the several branches of medicine. Diagnoses in individual cases are not attempted nor is treatment prescribed. Anonymous letters are ignored.

Baby's Skin

To the Editor:—My baby, 2 months old, has a large number of little white pimples on her body that are most noticeable; they appear in a greater quantity on her face. They are raised up from her face and are white and hard. They seem to increase in size gradually, and while she has a few on her back and legs, it is those on the face, neck and the top of the head about which I am most concerned. I have been told the only way to get rid of them is to open each one with a needle and remove the tiny white ball, but it seems like an impossible task to remove the countless number on her face alone to say nothing of being able to keep her still long enough. Isn't there some way of doing away with them? Are they itchy? What causes them? They seem to be increasing in number. I took her to a baby doctor, who said he had never seen so many on a baby and did not know exactly what to recommend.

J. J. W., New York.

Answer.—It is impossible to make a scientific diagnosis of an eruption on the skin without seeing it. The condition described may be multiple milia, in which the lesions consist of minute particles or balls of sebum which have become hardened and are lying in the ducts of the sebaceous glands, held imprisoned by cornified epithelioma. This condition is occasionally seen in young people, although it usually does not appear until after the age of 12 or 13 years. The proper treatment is to take a knife similar to a cataract knife and make a scratch incision over the lesions and press them out by means of a comedo extractor, but this must be done by a physician. They do not as a rule return.

It might be possible to get rid of some of them by using a strong skin-peeling ointment, for which a physician will be able to prescribe a formula, but this is a little hazardous in a child so young, as the skin might become too greatly inflamed.

Grace Hospital, Detroit, *regularly uses it for eye, nose, throat and wound cases . .*

Use it at home

as a safe antiseptic

FOR 45 years Grace Hospital in the City of Detroit has splendidly served a great community.

Keeping pace with the most modern facilities and equipment, this hospital, like many other great hospitals, makes Hexylresorcinol Solution S. T. 37 (1:1000) a part of its standard equipment. Uses it in nose, throat and eye cases, and in bronchoscopic treatments. Uses it for severe burns and open wounds and in cases of infection. Hexylresorcinol Solution S. T. 37 is a modern antiseptic, even stronger in germ-killing power than any usable solution of carbolic acid. Yet you can even swallow it without harm.

Use it for every cut or scratch. Pour it right into open wounds—it will not burn or sting. For intelligent antiseptic care, always keep Hexylresorcinol Solution S. T. 37 in your home medicine cabinet. It's economical. The 50¢ bottle is now a whole ⅔ bigger than before. And you get the large size for only $1.00 instead of $1.25. Prices the same in both the United States and Canada. Buy a bottle today!

HEXYLRESORCINOL SOLUTION S.T.37

Sharp & Dohme

This seal should serve as an indication of the trustworthiness of this antiseptic

SHARP & DOHME, Dept. G-11
640 North Broad St., Philadelphia, Pa.

I enclose 10¢ in stamps, to cover cost of mailing and handling, for which please send me a generous-sized complimentary clinical package of Hexylresorcinol Solution S. T. 37.

*Name*_____

*Address*_____

Watch your Arches

Your entire weight is shifted from one foot to the other more than 2000 times in a mile walk. Each time your foot hits the ground, the ground hits back. Step lightly.

A GREAT deal of excruciating pain in the feet or elsewhere in the body, caused by weakened or broken down arches, can be relieved or completely removed. When the three main causes of foot trouble—misuse, abuse and disuse—are generally understood, a great deal more pain will be avoided.

If you walk with your toes pointed out instead of straight ahead you put a severe strain on your arches. Overstrained, they are likely to sag or flatten. Bones may be forced out of place, pinching and torturing sensitive nerves.

All too often these tortured nerves communicate their distress to nerve centers far removed from the feet. Leg aches, headaches, backaches and many other aches are penalties which follow the misuse of a hard-working foot.

Abused, either by being cramped in a shoe which does not permit the toes to lie flat, or sprawled in an ill-fitting shoe, no foot can support and move its burden comfortably and easily. Shoes should have a straight inner edge. They should fit snugly under the long arch and at the heel.

Examine your shoes to make certain that the sole, under the ball of your foot, does not round down in the center or bend up at the sides. If it does, every step you take tends to flatten the short arch across the ball of the foot. Then the needless pain.

Disuse is the third crime committed against feet which should be able to give willing and uncomplaining service. A foot which has little to do besides carrying its burden from bedroom to dining-room and from there to an automobile or other conveyance, loses its muscular strength, becomes almost an invalid foot through feebleness.

But when muscles and ligaments have lost their strength or arches have become weakened, the services of a competent foot specialist may be needed. He may, by proper treatment, or by prescribing corrective foot exercises or scientifically constructed shoes, restore your foot to a full measure of usefulness.

A booklet "Standing Up to Life" which tells how to overcome many foot ailments by means of intelligent foot exercises will be mailed free upon request. Address Booklet Department 633-Z.

METROPOLITAN LIFE INSURANCE COMPANY
FREDERICK H. ECKER, PRESIDENT ONE MADISON AVE., NEW YORK, N.Y.

Trephones and Their Relation to Malignant Growth

To the Editor:—Please inform me concerning trephones (Carrel) and their possible relation to malignant growths.

H. G. W., Nebraska.

Answer.—Trephones (from the Greek, meaning I feed), according to Carrel, are substances manufactured by certain cells and used as food material by other cells. Experiments made by Carrel on the food requirements of cells in pure cultures brought to light the fact that the material necessary for the synthesis of protoplasm is obtained from certain substances present in the pericellular fluid and in embryonic tissue. These substances are secreted by lymphocytes and possibly by other cells. Thus trephones are growth-promoting substances which differ from hormones in that the hormones also stimulate the cells to activity but do not possess any nutrient property. Carrel's experiments indicate that after embryonic life the lymphocytes remain through life as a store of growth-promoting substances or trephones which may cause a resumption of cell activity when it is needed, as in wound healing or cell proliferation.

Nothing definite is known concerning the relation of trephones to malignant growth. For many years there has been much speculation as to the mechanism that determines malignant neoplasia (the formation of malignant tumors), but the explanation of this phenomenon is necessarily incomplete, as the conditions responsible for cell multiplication are unknown. Although it is now known from Carrel's experiments that growth energy probably depends on substances that are present in the pericellular fluid and that cells, as long as they are supplied with these substances, display unlimited power of multiplication, knowledge of normal and abnormal growth remains limited.

Infantile Uterus

To the Editor:—Is it possible for a woman with an infantile uterus to have children? Can anything be done to develop the uterus?

H. K., New Jersey.

Answer.—A woman with an infantile uterus may have children, though she is more liable to have a miscarriage and should be under the most careful supervision from the beginning of pregnancy. It sometimes requires several pregnancies before one will go to term.

Why doesn't he shake that COLD?

SINCE early spring that cold has hung on. Aunt Emma is sure it's "that silly gym work in school." Grandma says it's because he doesn't get sulphur and molasses.

One thing is certain. Such a condition should never have been allowed to gain a foothold. Colds should have immediate attention. For they can easily cause serious sinus infections—dangerous, disabling.

At the first sign of a cold—or at the first sign of any disease—the physician should be consulted.

Better yet! Don't wait for something to happen. Instead of letting disease send you to the doctor, be reminded by your calendar. Go periodically while you feel well. His examination, with x-rays used as an aid, will enable him to *know* your physical condition . . . to detect lurking disorders early when they can be corrected easily.

Complete Physical Inspection

Dangers to health respect no age limits. Both child and grown up should have a *complete* physical inspection each year. To be *complete*, it should include radiographs.

For these "x-ray pictures" afford important diagnostic facts that can be obtained in no other way.

HAVE AN ANNUAL HEALTH AND X-RAY EXAMINATION

Mail the coupon at the right for a free copy of "X-rays and Health."

EASTMAN KODAK COMPANY, *Medical Division*
353 State Street, Rochester, N. Y.

Gentlemen: Please send me your free illustrated booklet, "X-rays and Health."

Name _____

No. & St. _____ City & State _____

Long-cooked in Pure, Whole Milk
—Strained
—Ready-to-Serve

THE softest pillows are for baby's downy head—the softest clothes caress that dimpled body! Even baby's brush is feather-soft against the silken fluff that some day will be hair! . . . But what about baby's cereal? Is it as surely *right* for baby as those first, brief frocks and snowy, soft-soled shoes?

No extra straining is required even when Gerber's Strained Cereal is used in bottle feedings with baby's milk.

Gerber's Strained Cereal is baby's *own* —planned for baby's tummy *only*. It provides a combination of food values ideal for small bodies—whole wheat, hulled oats and extra wheat germ (for added vitamin B) all long-cooked in pure, whole milk, which improves food value and flavor. Many babies who refuse ordinary cereal *relish* Gerber's.

Finely strained to remove harsh bran particles, after their nutrients have been absorbed—Gerber's Strained Cereal is thoroughly cooked, unseasoned, ready when you and baby are ready. On time feedings are easy even in summer—no danger of undercooking or overcooking. Gerber's is always the same—ready when warmed and seasoned, as the doctor directs.

Ask Your Doctor

about Gerber's Cereal and follow his advice on how, when and in what quantities to serve it. Ask him, too, about Gerber's Strained Vegetable Products—also ready-to-use—specially prepared for baby. . . . All Gerber Products are accepted by the Foods Committee of the American Medical Association. Over 100,000 doctors have written for samples.

Strained Cereal—10¼ oz. cans
Strained Carrots — Tomatoes
Vegetable Soup—Prunes—Peas—Green Beans—Beets—Spinach—4½ oz. cans

Write for Sample
Use Coupon Below

Gerber's

15¢ at Grocers and Druggists

9 STRAINED FOODS FOR BABY

GERBER PRODUCTS COMPANY,
Fremont, Michigan
(*In Canada*) Fine Foods of Canada, Ltd., Windsor, Ontario

Please send me sample can of Gerber's Strained Cereal. I enclose 10c to cover postage and mailing.

Name .....

Address H-8

Croxon Cream

To the Editor:—I recently purchased a $5 jar of Croxon Cream for destroying hair. Please advise me whether this preparation contains any ingredient that may prove to be injurious to the skin.

G. H. G., Pennsylvania.

Answer.—Croxon Cream was analyzed by the chemists of the American Medical Association during the summer of 1932, and they reported that from their examination Croxon Cream appeared to be a mixture of sodium perborate, zinc oxide and zinc peroxide in a petrolatum base. The amount of petrolatum, sodium perborate, zinc oxide and zinc peroxide found in a $5 jar of Croxon Cream could be purchased at wholesale for less than 5 cents. An article on Croxon Cream was published in the Bureau of Investigation Department of *The Journal of the American Medical Association,* Aug. 20, 1932. In that article the opinion was expressed that Croxon Cream was quite worthless for either the temporary or the permanent removal of hair and that Croxon Cream would simply bleach the hair. The Croxon concern sells, also, an auxiliary known as Croxon Depilatory Powder which, according to the same article, is just another of the sulphide mixtures which may not merely remove hair temporarily but may also remove the skin.

Superfluous Hair; Depilatories

To the Editor:—What is the name of a depilatory that will not cause harmful after-effects?

G. T., Kansas.

Answer.—There are a great many depilatories which can be used by the average person without causing inflammation of the skin. The same preparations may irritate more sensitive skins. Depilatories fall into two general classes. The first class consists of compounds that have the power of dissolving horny substances like hair. Most of these are alkaline sulphides. If the skin is sensitive, they may cause severe irritation. The second class consists of the depilatories that pull out the hair, such as waxy pastes to which the hair adheres and which are then removed with a jerk, taking the hair with them. Neither of these methods is permanent. Electrolysis, in the hands of a qualified physician, is the only means of permanently and safely removing superfluous hair. It is, of course, possible to bleach the hair so that it is less conspicuous.

Garments illustrated are Water Woolie with halter neck and sun back and Vanta Junior Wikie.

SUN is his friend but WIND is his ENEMY!

TREACHEROUS beach breezes, late-afternoon winds, the cold gusts that precede rain—are all enemies of your Baby's health! Be sure he's dressed warmly — even when sun-bathing!

Vanta Water Woolies and Sun Suits safeguard his precious health by supplying the needed protection. They're cut low at side and back to allow full benefit of the sun's wholesome rays—yet they're warm and snug over the chest and tummy, the regions you want protected most.

Let Vanta Water Woolies and Sun Suits safeguard *your* Baby's health this summer. Every Mother can afford this protection for her loved one, for the prices are extremely reasonable. Be sure to see the new 1933 models of Vanta Water Woolies at your favorite department store.

A Helpful Book —FREE

The Toddler tells you how to train your child during the "neglected age" from 2 to 6 to be resourceful rather than dependent upon others. Your free copy may be had at the Infants' Department of your favorite store.

The Famous Vanta Sun Suits with mesh front and warm elastic-knit trunks. Crotch is white-lined for safety. In the latest colors.

Earnshaw Knitting Company
Dept. H-6 Newton, Massachusetts

Vanta
Water Woolies and Sun Suits

Originators No Pins—No Buttons. Self-Help Garments, Sun Suits and Water Woolies.

Importance of Spinach in Ordinary Diet

To the Editor:—Some time ago I read an article which stated that some physician had come to the conclusion that spinach was no longer considered a food of such high value in the diet as it had been rated formerly. Because it was more apt to clog the digestive tract than it was to be of value in the diet, it had lost its place of importance, and other vegetables, such as peas, were suggested in its place. Is there any foundation for such a statement? Because I am teaching nutrition, I am particularly interested. H. B. D., Pennsylvania.

Answer.—Spinach, like many good foods, was greatly overstressed by dietary enthusiasts. Spinach, of course, contains minerals and vitamins and is a valuable food, but it is not the only green vegetable. Many enthusiastic mothers and, unfortunately, some professional persons who did not think straight, tried to get children to eat spinach every day, with the result that the youngsters quite properly revolted.

The truth about spinach and other green vegetables is that it is not necessary to concentrate on any one of them, but that each day's diet should include at least one serving of one of the green vegetables with spinach taking its normal place in a varied menu.

It is not true that spinach clogs the digestive tract.

The use of green vegetables should be encouraged, but one need not fall down to worship any one of them.

Nausea

To the Editor:—What is the physiologic reason for the relief from nausea that results from lying on the back?

B. E. O., New Jersey.

Answer.—Lying on the back does not relieve all kinds of nausea. Nausea is merely a symptom. It may be due to disturbances in the stomach, in other abdominal organs, in the brain, or in the mechanism that controls equilibrium, as in seasickness, car sickness or plane sickness. It may be due to emotional disturbances, to fevers or infections, or to pregnancy. If relief is secured by lying down, it is because rest improves most symptoms, largely through slowing up all the processes of metabolism.

An ounce of prevention is worth a pound of promises.—*American Dental Association.*

FOR QUICK ENERGY!

Welch's

Certified Pure — Pasteurized

GRAPE JUICE

It Possesses Valuable Nutritional Elements

You may think of Welch's only as a beverage, as a delightful and pleasing fruit drink. It is more than that. Recent tests in an Eastern University Laboratory reveal that Welch's possesses valuable nutritional elements.

FOR QUICK ENERGY

Welch's Grape Juice contains simple grape sugars which are speedily absorbed and require no digestion.

Welch's offers essentially the same nutritional value as ripe Concord Grapes fresh from the vine . . . sugars, vitamin B content, iron, potassium, and energy elements (286 calories to the pint). For children and adults, Welch's offers an abundance of body-energizing properties combined with a delicious taste.

Welch's has other dietetic assets, too. It contains vitamin B (B_1). Its fruit acids have, as an end effect, an alkaline reaction on the body. It provides good quantities of iron. Thus, Welch's is valuable as a hemoglobin or blood restorative.

Why Welch's

AND NOT CHEAPER JUICES?

It is the Welch process that retains in the bottled juice the valuable nutritional properties of ripe Concord grapes so essential to the system. Welch's is the Certified Pure, Pasteurized Grape Juice. It's aged three months to permit the natural but crude tartaric acid crystals to settle out of the juice. It contains no adulterants, no synthetic flavors, no artificial coloring, no preservatives, no added water. And it's inexpensive . . . the cheapest in 35 years. Welch's is undiluted grape juice, so many prefer to add one-third water to the pint. Mixed this way, Welch's costs less than 3½c a glass.

CERTIFIED PURE

By noted scientist through tests made in Eastern University Laboratory.

THE WELCH GRAPE JUICE CO., Westfield, N. Y.

TYPHOID CARRIERS ARE CONTROLLED IN STATE OF NEW YORK

The discovery and supervision of typhoid carriers are of extreme importance in the control of typhoid. A typhoid carrier is a person who is not ill with typhoid but who harbors the germs of the disease in his body and discharges them in his body secretions. The carrier may continue to discharge the germs for years regularly or intermittently, the New York state department of health explains in a bulletin from its regular news service.

The control measures adopted consist mainly in the supervision of the occupation and residence of the carrier. He is prohibited from engaging in occupations involving the handling of food used by the public. Frequent visits are made to the carrier to make certain that necessary precautions to prevent the spread of typhoid are being carried out.

Occasionally because of age, or for some other reason, a typhoid carrier who for the protection of the public is prevented from engaging in his usual occupation is unable to adapt himself to new employment and has difficulty in earning his livelihood. Financial assistance has been furnished from a special fund for these persons in the state of New York.

HOW DOES YOUR VEGETABLE GARDEN GROW?

For a cheap, balanced diet, plant a vegetable garden, is the suggestion of the U. S. Department of Agriculture. Even a small back yard will yield green foods enough to count materially toward the variety necessary for a healthful, balanced diet.

But for those who are fortunate enough to have as much as half an acre, this plot can be made to furnish practically all the vegetables needed by a family of five throughout the summer, with some left over to can or store for the winter.

Practical for home gardening are the following vegetables: tomatoes, cabbage, lettuce, spinach, carrots, turnips, beets, parsnips, onions, string beans, asparagus, cauliflower, celery, peas, beans, corn, white potatoes, sweet potatoes and squash.

This list includes a wide range, from which the family can grow perhaps only a few, taking into consideration family preferences and a balanced diet.

To get the most out of any garden, keep the land working every minute of the growing season.

A Wonderful Aid

In Building Sturdy Bodies

FOR years Horlick's has been famed for its definite aid in building sturdy bodies, strong bones and vigorous muscles. A superior blend of rich, whole milk, wheat and malted barley, Horlick's contains the valuable minerals, calcium and phosphorus, proteins and Vitamins A, B and G. This is why it is so nutritious, so beneficial. And children and grown-ups both love its delicious flavor. Try it for yourself and don't accept an inferior imitation. Your druggist has Horlick's in natural and chocolate flavors.

HORLICK'S

The Original Malted Milk

HORLICK'S MALTED MILK CORP.
Dept. H-18, Racine, Wis.

Please send me.....weight charts for pre-school children and.....charts for school children for recording by a graph the weight progress of individual children.

.....

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EMOTIONALLY SUPERIOR CHILD HAS REAL ADVANTAGE

"If children are to realize the richness of life, the vital values, they must come to know that sometimes we learn with our heads and sometimes we learn only with our hearts, that wisdom is really knowledge plus. And the marginal plus is the thing by which we live," maintains Alice Hawthorne who writes about "The Emotionally Superior Child" in the *Washington Education Journal.*

"With all his intellectual getting, there must come to the child a fine emotional stability, or there will result a maladjustment of personality traits and a personality make-up that is so unbalanced that all things that contribute to his life fail to become integrated into the kind of a life-habit pattern which can make the years ahead for him rich and complete.

"It matters less to a teacher nowadays whether your child is intellectually superior when he enters school, but it matters tremendously to the life-centered school of today whether or not your child is emotionally superior," Alice Hawthorne adds.

CHARACTER, VOCATIONAL GUIDANCE NEEDED BY BLIND

"The timbers of character must be strong to stand the strain of today, but stronger yet in the blind," writes T. R. Corr in *The Oklahoma Teacher.* The Oklahoma School for the blind spends great effort in trying to grow enduring character.

In addition, vocational guidance plays an important part in the school's curriculum. Agriculture, poultry husbandry, floriculture and shoe repairing have been added to a course of study which has long included music, home economics, public speaking, piano tuning, broom making, mop making, chair caning and dairying.

There is no field in which the blind can compete vocationally unless an artificial monopoly is created in which the blind do not have to compete with those who see. The employer employs for business, not for charity, and frequently the output of the blind person is only one fourth as much as that of the normal person. Hence it is better, when it can be arranged, that the blind have their own business, or work for or with their relatives or family.

LEAD POISONING LURKS IN INNOCENT SOURCES

Early last winter, thirty-five children and one adult, all Negroes, living in Baltimore, were discovered to have lead poisoning. Investigation disclosed the fact that a junk dealer had given to these families the wooden casings of old automobile batteries from which the plates had been removed. The casings were used as stove fuel. In burning, the wood produced an intense heat and threw off fumes heavily impregnated with lead. The severity of the poisoning evidently depended largely on draft conditions in the stoves.

Lead is a cumulative poison; it is excreted from the body slowly. Thus, if it is taken into the body fairly regularly or in considerable amounts, it accumulates rapidly so that soon noticeable symptoms of poisoning appear.

Paints often contain a large amount of lead. Since painters always get more or less paint on the hands, they should be careful to scrub their hands thoroughly before eating. Painter's colic is one of the symptoms of lead poisoning.

Ethyl gasoline sold at practically all gas stations contains lead. One should be careful not to get much of this gasoline on the hands or to use it for any purpose other than for running gasoline engines.

Cases of arsenic poisoning some years ago were traced to a fruit spray powder. Some of the powder was spilled on a table top and later brushed into a flour barrel beneath. This incident emphasizes the necessity of keeping all material of a poisonous nature in a safe place away from the vicinity of food, and also the need of having it properly marked. Food supplies should be kept by themselves. All washing powders and drugs should be kept out of the reach of children. Common household lye, swallowed by children on the supposition that it was candy, has caused many tragedies or near tragedies in the home.

These warnings were recently issued by the New York state department of health.

"There is this difference between those two temporal blessings, health and money: Money is the most envied, but the least enjoyed; health is the most enjoyed, but the least envied: and this superiority of the latter is still more obvious when we reflect that the poorest man would not part with health for money, but that the richest would gladly part with all their money for health."—*Colton.*

If men had to wash repulsive handkerchiefs

Illustrations and text copr. 1933, Kleenex Co.

Use KLEENEX once and destroy

no disagreeable washing
no danger of self-infection

IF YOU'VE ever washed a handkerchief used during a cold, you know what Kleenex means to housewives!

These soft, disposable tissues bring release from the most disagreeable job on earth—and one that is dangerous as well.

For handkerchiefs used during colds literally swarm with germs. These germs infect your hands and laundry. You can easily see how one handkerchief can spread colds through an entire family.

In many convenient forms

Kleenex has been made marvelously convenient, both for handkerchief and cosmetic use.

These downy tissues come in rolls and packages, ideal for dressing table and bathroom; and in extra size tissues, larger than a man's handkerchief.

Try 'Kerfs, too—smart tissues with handkerchief borders.

The quality is the same, in whatever form you buy Kleenex. All Kleenex is made from finest rayon-cellulose, highly absorbent, soothing and soft.

Kleenex is sold at every drug and department store, at very low prices.

* *

Kleenex safer

—say scientists, because the absorbent fibers hold germs tightly until Kleenex can be destroyed. There is much less danger of self-infection; less danger of handkerchiefs spreading colds to others.

KLEENEX *disposable* **TISSUES**

POSSIBILITY OF DISEASE AFTER FLOOD IS ACUTE

"News dispatches from several parts of Iowa tell of serious floods following torrential rains, with the inevitable destruction of life and property.

"The first consideration in a flood is, of course, the removal of people from flooded areas to places of safety. It is, however, after the flood waters have subsided and the people again go to their homes that the danger of the spread of disease becomes most acute," warns the Iowa state department of health.

"The principal danger is from wells that have been flooded. If a well has been flooded, all water should be boiled until after the well has been thoroughly cleaned and disinfected. Persons residing in flooded areas should further protect themselves against typhoid fever by vaccination.

"After the flood waters have receded the well should be pumped until all of the turbid water has been removed. In the case of larger dug wells, cleansing can be aided by scrubbing the walls with a strong solution of chlorinated lime. For disinfecting the water in a well, one fourth to one half pound of commercial chlorinated lime (25 to 30 per cent chlorine) is recommended, while in dug wells of larger diameter, one pound of this material may be used.

"Best results are obtained by adding enough water to the chlorinated lime to make a thick paste. This paste should then be mixed in two or three gallons of water making a solution which is poured into the well, mixing it as thoroughly as possible with the water in the well. This should remain in the well at least 24 hours. The well should then be pumped until the chlorine taste no longer persists. Analysis may be made a week later.

"A well used as a source of water for the public supply should by no means be put back into regular service before analysis indicates the water to be satisfactory. Until such time, all water used for drinking purposes should be boiled by the consumer."

"Men that look no further than their outsides, think health an appurtenance unto life, and quarrel with their constitutions for being sick; but I that have examined the parts of man and know upon what tender filaments that fabric hangs do wonder that we are not always so; and considering the thousand doors that lead to death, do thank my God that we can die but once."

—*Sir Thomas Browne.*

Do Your Hands "Talk Shop" After Hours?

When the day's work is done, can you relax and enjoy leisure without your hands still reminding you of that work?

Constant scrubbings with harsh soapy water soon rob the skin of its natural oils—leave it dry. And dry skin quickly becomes rough, red and coarse.

But, you can keep that skin soft and fit—no matter how often your hands are soaped and scrubbed; no matter how much the dry winds or hot sun attack your face, neck and hands.

Just rub a bit of rich Nivea Creme* into the skin after each scrubbing—and before going out. Then, your skin can't become dry. It is always smooth and young.

Many doctors and nurses not only recommend Nivea Creme but also use it themselves. Why not try it out yourself?

Send for your generous, free sample

NIVEA CREME

* Trade Mark Reg. U. S. Pat. Off.

P. Beiersdorf & Co., Inc., Dept. H-6
46-10 11th St., Long Island City, N. Y.

Please send me without charge a trial tube of Nivea Creme.

Name.....

Street.....

City.....State.....

BAMBOO HAS MANY USES; CALLED UNIVERSAL PROVIDER

Bamboo is called the universal provider by Dr. Willard M. Porterfield, Jr., in *The Scientific Monthly*, and one is inclined to agree with him after reading his article in which he tells of the varied uses of this product.

"When I return to luncheon, among the vegetables on the menu are delicious creamed bamboo shoots sliced. From somewhere in the back quarters are wafted in to me the plaintive notes of the bamboo flute interspersed with occasional scrapings and squeaks of the Chinese violin, some of which are also made of bamboo," writes Dr. Porterfield.

In his tour of inspection around the campus in Shanghai he has put his approval on requests for new bushel baskets, tool handles, carrying poles, basket trays for carrying pots of plants, new fences and fence posts, ladders, poles to be split into stakes and made into frames for the support of flowers, and poles on which to hang back-nets for the tennis courts, all constructed from bamboo.

Fans, tiles for mahjong, kites and pen holders are merely a few of the incidentals which are made from bamboo.

Paper, bridges and even garages have been made entirely of bamboo. In the Philippine Islands there is an organ built entirely of bamboo, the only one of its kind in the world.

The leaves, too, serve as thatching material, lining for tea boxes, raincoats, large umbrellas, and even for wrapping sweets of certain kinds.

Spörry lists 1,048 practical uses, which represents really an enumeration of Japanese articles of bamboo contained in his own collection. The remainder of the total number, 1,546, includes articles of ornamental use.

EYES, EARS AND FEET

E comes before F
So it's eyes before feet
You should look every way
When you're crossing the street.
E is also for ears
And it often may be
The ears hear the danger
The eyes cannot see.
Your ears and your eyes
Come first, then your feet;
Always listen and look
Before crossing the street.

—Eunice Cassidy Hendryx in *Safety Education.*

Schools and Camps

« ORCHARD HILL CAMP »
The Children's Camp—12th Season. Girls and Boys 3-10
Ideal place for children while parents are attending World's Fair. Healthful climate. Individual attention and constant care given by physicians and experienced counselors.
R. J. Lambert, M.D., Dir., Woods Rd., St. Charles, Ill.

Schools for Backward Children

TROWBRIDGE TRAINING SCHOOL
Home school for nervous, backward children. *Best in the West.* Beautiful buildings. Spacious grounds. Experienced teachers. Individual supervision. Resident physician. Enrolment limited. Endorsed by physicians, educators. Booklet. E. Haydn Trowbridge, M.D., 1810 Bryant Bldg., Kansas City, Mo.

Beverly Farm (INC.) *A Home and School for Nervous and Backward Children and Adults*
220 acre farm. 7 bldgs. New school gymnasium. 35th year. Industrial and school training given. Dept. for birth injury cases. GROVES BLAKE SMITH, M.D., Supt. **Godfrey, Ill.**

Of the most absorbing importance to expectant mothers

"A Child is to be Born"

A reprint of the delightful and practical articles in HYGEIA

Diet · Clothing · Exercise
Symptoms · Bathing · Teeth
Sanitation · Layette

15c AN ENCOURAGING AND SYMPATHETIC BOOKLET 15c

American Medical Association
535 N. Dearborn St. Chicago, Illinois

Elmo BEAUTY PREPARATIONS
FOR *Healthful* Beauty

No matter how delicate your skin is, you can safely use Elmo beauty preparations. Repeated chemical analyses show the absence of any ingredient that could possibly harm the normal skin. In fact, Elmo toiletries are as pure as it is humanly possible to make them.

For the sake of your health as well as your beauty, use Elmo beauty preparations—there's one for every need:

ELMO

RA-LO LOTION	CLEANSING CREAM
TISSUE CREAM	CUCUMBER CREAM
MELTING CREAM	TONIC ASTRINGENT
SKIN FRESHENER	RA-LO FACE POWDER

At Drug Stores and Department Stores

ELMO, Incorporated
21st Street and Hunting Park Avenue
Philadelphia - - Pennsylvania

VITAL STATISTICS AID PUBLIC HEALTH

To many persons, statistics seem like a jumble of figures and much time and energy poorly spent. This notion is erroneous; for one thing the measurement of the public health is made possible by vital statistics. This information is obtained usually by a tabulation of certain events, births, deaths and sickness, not only as a whole but with many classifications as to sex, age, nationality, color, occupation and other factors.

Only by this information can authorities recognize special needs. These figures are accurate only when situations are reported. Unreported and concealed cases defeat all efforts of control.

Although there have been occasional premature and unsubstantiated conclusions made, based on vital statistics, these records of the past generation paint the story of a constant decrease in sickness and death from many of the pestilences and diseases, and show consistently greater safety for children and a constantly increasing span of life, owing at least in part to the untiring efforts of health workers. These workers are guided by statistics as well as by individual reports, the New York State department of health maintains.

ILLNESS IN BAD MONTHS

There are good months and bad months. Indeed, reports show that some months have good reputations and others have bad ones in regard to sickness and death. June, August and September are months when the least sickness is reported. March is a particularly bad month, and this is also true of January. Weather conditions to a large extent cause the bad months. Although the weather cannot be altered, every one can do a great deal to keep well, to strengthen his powers of resistance and to beware particularly of bad weather, a report from the department of health of the state of Maryland maintains.

It is only the great man who appears to know how to do the smallest thing with thoroughness. He surmounts difficulty with care, and regards an obstacle not as something to avoid or shirk, but simply as a difficulty to overcome. In the face of his thoroughness the insurmountable often melts like snow under a spring sun. The man who has accepted thoroughness as his gospel in life is a hard man to beat. Thoroughness first, then speed.—*Edward Bok.*

positive sterilization ***possible with*** **PYREX** ***nursing bottles***

NURSING bottles are more thoroughly sterilized if the possibility of breakage is removed, 400 doctors have found.

This is only one of the reasons why they suggest Pyrex Nursing Bottles. These bottles are practically immune to breakage from heat or cold! They can stand the high temperature sterilization demands and are equally resistant to refrigerator cold. This resistance also permits uninterrupted feeding schedules.

And because Pyrex Nursing Bottles are 6-sided on the outside, mothers find them easy to hold. Rounded on the inside, they are easily cleaned.

Two sizes . . . 8-oz. narrow neck or wide mouth, 25¢; 4-oz., narrow neck for boiled water or orange juice, 15¢.

"Pyrex" is the registered trade-mark of Corning Glass Works, Corning, N.Y., and indicates their brand of resistant glass. These prices apply in the United States only.

The A.P.-UPLIFT

U. S. Pat. 1,702,922 —Invented by Mme. Poix to create the stylish upward contour; to relieve pain and remove cause of many bust troubles; also for pre-natal and nursing periods.

Sizes 30 to 44
Pink Repp.....$1.00
Pink Tussah Silk... 1.50
Pink Mesh or Jersey 2.00

G. M. POIX, Inc.
103 Madison Ave.
New York, N.Y.

If not at dealers, order direct giving exact bust measure next to skin Booklet free on request

Why Many Physicians Prescribe Lucky Gluten Flour

1—Because it gives the loaf a better flavor—hence, patients find it less objectionable.
2—Because it is guaranteed to meet U. S. Government standards for a gluten flour.
3—Because it stands approved by the American Medical Association—Committee on Foods.

Send $1.00 for 5 lb. trial package.

FEDERAL MILL, INC. ■ LOCKPORT, N. Y.
Mfrs. of High Quality Flours for more than 25 years.

Beauty Advisers to Over 10 Million Women Recommend This

NEW DEODORANT

Prevent Perspiration Odor This New, Easy, Economical Way

No wonder Perstik, the new *"lipstick"* deodorant, is the year's cosmetic sensation! It *completely* banishes under-arm odor, is applied as *swiftly* and neatly as a lipstick, and *cannot* irritate skin or injure fabrics.

A touch of Perstik to the armpits each morning gives effective and *lasting* protection. When you go out for an evening of theatre or dancing, slip Perstik in your purse—Perstik is *easy to use—anywhere —anytime.*

Important

Insist on *genuine* Perstik in the octagonal white case with the black and silver cap. Genuine Perstik *cannot* harm your skin even after shaving. It can *never* injure clothing—use Perstik and slip right into your dress. And Perstik is economical to use—*only 50¢* and you have months of lasting protection against odor.

Get Perstik where you buy your cosmetics. If by chance you do not find it there, send 50¢ to *Perstik, 469 Fifth Avenue, New York.*

50c at Drug and Department Stores

Perstik

THE "LIPSTICK" DEODORANT

Awarded the Good Housekeeping Seal of Approval

Trade Mark Reg. Patents Pending

GASTRIC CANCER CAUSES HIGH MORTALITY

From one fourth to one third of the deaths from cancer are from gastric cancer, more commonly known as cancer of the stomach. This type occurs more frequently in men than in women. Clinically, gastric cancer may be divided into two classes: (1) the kind of cancer that gives a history of indigestion, frequently resembling the history of peptic ulcer, for several years before the cancer becomes obvious and (2) the cancer of the stomach in which gastric symptoms appear only a few months before the disease is detected. The first type represents about 25 to 30 per cent of all gastric cancers; the second type comprises about 70 to 75 per cent of the gastric cancers.

If a patient reaches the "tropic of cancer" at about 35 years of age and begins to complain of vague symptoms of indigestion, such as belching, nausea, water-brash, heartburn, occasional vomiting, pain and discomfort in the upper part of the abdomen, whether or not these conditions appear at a regular time after meals, he should receive a careful examination by a competent physician. In the majority of cases this stomach trouble will be found to be due to something other than a gastric lesion and can be cured by appropriate medical measures. If, however, the patient is not relieved of his complaints after faithfully following the advised treatment for two or three weeks, his stomach and intestines should be examined with the x-rays by some one fully competent.

If cancer is found, an operation should be done as soon as possible by a surgeon of experience in gastric surgery.

In the early stages of disease the diagnosis is difficult, but it is in the early stages that the diagnosis is important, so that proper treatment can be given. It has been shown that in about 23 per cent of cancers of the stomach coming to necropsy the cancer is still confined to the stomach, and that many of these deaths result from perforation of the cancer and peritonitis, and not from the constitutional effects of cancer. It seems probable that, if at necropsy 23 per cent of gastric cancers are still limited to the stomach, an earlier diagnosis and a proper operation would uncover a larger percentage of cases in which the cancer was confined to the stomach and could be cured by partial gastrectomy.

Dr. J. Shelton Horsley offers this valuable explanation of gastric cancer in the *Bulletin of the American Society for the Control of Cancer.*

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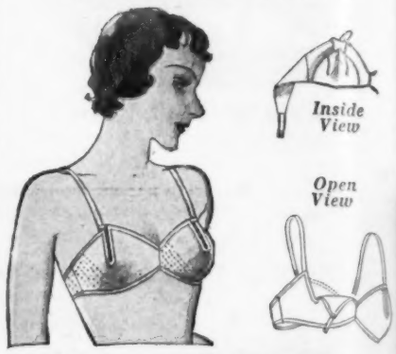

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